THE LITERARY GAZETTE

AND

Journal of the Belles Lettres, Science, and Art.

Nº 2017. LONDON, SATURDAY, SEPTEMBER 15, 1855. *Price* **Fourpence.** *Stamped Edition, Fivepence.*

GUY'S—1855-6.—The MEDICAL SESSION COMMENCES in OCTOBER.

The INTRODUCTORY ADDRESS will be given by W. W. GULL, M.D., on MONDAY, October 1, at Two o'clock.

Gentlemen desirous of becoming Students must give satisfactory testimony as to their education and conduct. They are required to pay £40 for the first year, £40 for the second year, and £10 for every succeeding year of attendance; or £100 in one payment entitles a student to a perpetual ticket.

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Mr. Stocker, apothecary to Guy's Hospital, will enter students, and give any further information required.

Guy's Hospital, August, 1855.

OWEN'S COLLEGE, MANCHESTER.

(In connexion with the University of London.)—SESSION 1855-6.—THE COLLEGE WILL OPEN for the Session on Monday, the 8th day of October next, and the Examination, previous to the admission of proposing Students, will commence on that day, and be continued on following days, at ten o'clock A.M., at the College. The Session will terminate in July, 1856.

Courses of Instruction will be given in the following departments:—

Comparative Grammar, English Language, and Literature, Professor A. J. Scott, M.A., Principal.

Logic, Mental and Moral Philosophy, Professor A. J. Scott, M.A.

Languages and Literature of Greece and Rome, Professor J. G. Greenwood, B.A.

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Jurisprudence, Professor Christie.

Political Economy, Professor Christie.

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Natural History—The entire Course occupies two Sessions—the subjects for the present Session are Geology and Botany, Professor W. C. Williamson, M.R.C.S.L., F.R.S.

French Language and Literature, M. Podevin.

German Language and Literature, Mr. Theodores.

EVENING CLASSES for parties not attending the College as regular Students.

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ADDITIONAL LECTURES, on which the attendance of the Students is optional, and without fees.

On the Hebrew of the Old Testament, by Professor Scott.

On the Greek of the New Testament, by Professor Greenwood.

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Further particulars will be found in a Prospectus which may be had from Mr. NICHOLSON, at the College, Quay Street, where application may be made to the Principal, on and after the twenty-fourth day of September instant, daily, between the hours of ten and one.

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REVIEWS.

An Account of the Income and Expenditure of the British Museum for the Financial Year 1854-5, *with a Statement of the Progress made in the Arrangement of the Collections, and an Account of Objects added to them.* By Order of the House of Commons.

If any documentary evidence were needed to strengthen the suggestions of the Parliamentary Committee of the British Association, now assembled at Glasgow, more especially that which recommends the creation of an official Board of Science, we might point to the Report of the Officers of the British Museum for the past Financial year. Notwithstanding the labours of a Special Commission, and all that has been publicly said and written of the errors of this establishment, arising out of the anomalous constitution of its governing body, matters are still going on the same, and the year 1854-5 has been marked by even more than the ordinary amount of dissatisfaction. The ruinous effects of this system are becoming more seriously manifest every year. The new scientific establishments—at Marlborough-house, at Jermyn-street, and at Kew—are well managed, and thrive in a degree to satisfy the expectations of scientific men, but the British Museum neither commands nor merits respect, and the feeling which this has given rise to among the patrons and labourers in science and literature is beginning evidently to show itself among the public at large. It is not owing merely to the indifference shown to memorialists in the recommendation of purchases, nor to the disregard of the want of a classed library catalogue, nor to the discreditable treatment of foreign naturalists invited to aid in the arrangement of the collections, that the ordinary public are losing interest in the Museum, but to the general unsatisfactory progress of the whole system. The number of ordinary visitors during the past year has been less than half what it was five years ago; while the number of artists and students to the sculpture galleries has fallen to nearly half of what it has been each year for five years previously; and the number of visitors to the Reading Room has for the last five years, been diminishing year by year by several thousands a year; and in a time, be it remembered, of unparalleled increase in the population, and of unprecedented growth in the popular taste for literary and scientific pursuits.

No attempt is made by the Officers to account for this diminution of public interest in the British Museum. It cannot be owing to the war that the attendance of Readers in the Library has been gradually diminishing since 1850, year by year. This results from the disappointment which is felt and expressed on all sides among literary men, that no effort has yet been made to comply with the reiterated demand for a printed *Classed* Catalogue. In the very face of this yearly decreasing use of the National Library, the Trustees procure from Parliament a grant of some 60,000*l.* for more Reading-Room space, rejecting in the mean time purchases of specimens, valued at a few hundred pounds, which have been recommended by the united voices of a body of scientific men of the highest repute, in their department of knowledge, in the land. And all the minor grievances of the establishment remain more or less. The same parsimony is exercised in the purchase of foreign books, and the same extravagance in book-binding. Egyptian antiquities are still propped up with uncouth bits of timber and rough brickwork, although reported in couse of being mounted on granite pedestals, "as rapidly as the material can be supplied;" and the collection of shells, instead of being named, is being moved about by all sorts of impossible rules of classification in accordance with the crotchetty state of "our knowledge of the animals which form them." We proceed to verify the foregoing remarks by a comparison of figures:—

Ordinary Visitors.

1849	979,073
1850	1,098,863
1851	2,527,216
1852	507,973
1853	661,113
1854	459,262

Artists and Students to Sculpture Galleries.

1849	6804
1850	6611
1851	6086
1852	6983
1853	6518
1854	3652

Visitors to Reading Room.

1849	70,371
1850	78,533
1851	78,211
1852	72,226
1853	67,794
1854	56,132

On turning to the reports of the respective officers of departments, we are impressed at the outset with the absurd manner in which it is attempted to puff off the labours of the year. Mr. Panizzi's savours not a little of humbug. The Keeper of the Department of Printed Books announces that the—

"Works added to the Collection during the year have been placed on the shelves of the Library as soon as catalogued. The press-marks, indicating their respective localities, have been affixed to each volume, title, and entry in the Catalogue. The total number of these items amounts to 136,153.

"Each article acquired has been stamped. The number of stamps impressed is 137,919."

This portentous amount of stamps and press-marks, which to mention is mere twaddle, could be imprinted, we have no doubt, by a corps of post-office clerks in a few days, if not hours.

The number of volumes really added to the Library in the course of the year is 13,055, *including* Music, Maps, and Newspapers; and including every scrap of pamphlet, odd numbers, &c., 37,434. The number of titles written for the New General Catalogue amounts to 41,052, for the Supplementary Catalogue 26,132, and for the Periodical Catalogue 275—making together 67,459; but as the number is under 220 slips per day, it cannot be very hard work for a couple of clerks to perform this service. A well-organized staff of some thirty or forty intelligent copying clerks, with the help of a stereotype-founder to cast a moveable type for each title, is what is needed for the production of a printed Classed Catalogue; and the types would serve for a new edition of it at any time when called for. Let us hope that some literary member of Parliament will bring the subject forward, and procure a special vote for the purpose.

In justification of the process of summonsing publishers to the criminal courts for the non-delivery of their publications, Mr. Panizzi has the following:—

"The enforcement of the delivery of books due under the Copyright Act has been steadily carried out during the year. In 1851, the year preceding that in which active proceedings were taken, the number of articles received was 9871. During the past year the number has been 19,578, a result which fully justifies the course adopted to obtain books which had been withheld, and to secure regularity in the delivery of current publications. In the Report for the year 1853 it is said, in allusion to the fact that many arrears had been collected during that year, 'it cannot be expected, therefore, that the numbers should be so high in future.' The experience of the past year, however, justifies the conclusion, that in future, by the exercise of due care, the tendency will rather be towards an increase than a decrease on the number of articles then received."

The duty of collecting arrears of publications should, without doubt, be properly enforced, but not in the offensive and partial manner which is still persisted in.

The Report of the Keeper of the Department of Manuscripts is a much more straightforward production. We have pleasure in giving it entire:—

Department of Manuscripts.

"1. The sheets of the Catalogue of Additions for 1846 have been printed off, from K to S inclusive, and the remainder is in a state of forwardness. The Additions also for the years 1848, 1849, 1850, 1851, and part of 1852, have been completed in copy.

"2. The sheets from 3 D to 4 E, inclusive, of the Catalogue of Maps and Topographical Drawings, have been printed off, and the volume will be shortly ready for publication.

"3. The brief Catalogue or Register of the Additional Manuscripts placed in the Reading Room has been continued from January 1853 to July 1854.

"4. The Additional Charters and Rolls have been described, with an index of names and places, from No. 2323 to No. 2689.

"5. Seven volumes in Arabic, and 156 in Turkish, have been described in detail for the General Catalogues of these classes of Manuscripts; and an Index to the Turkish class is in progress.

"6. Two hundred and twenty-two volumes in Persian and Hindustani have been catalogued in detail (making in all 1115 described for the General Catalogue of this class). This Catalogue is now completed up to January 1854, and an alphabetical Index of the Persian Titles of works has been compiled as far as the letter ﺝ.

"7. Sixty-eight volumes in Syriac have been described in detail for the General Catalogue of this class, and thirteen other volumes have been recollated and rearranged.

"8. One hundred and thirty-one Chinese and Manchu, and ten Sanscrit Manuscripts, have been described.

"9. The General Catalogue of the Hebrew Manuscripts is still in progress.

"10. The general classed Inventory of the Oriental Manuscripts has been kept up to the present time.

"11. An Index has been made to the Register of the Additional Manuscripts, from the year 1846 to 1853, inclusive.

"12. Indexes and Tables of Contents have been made to the Cottonian Manuscripts, Julius C. III. and Julius C. V.; the Harleian, 6989—7000, 7007, 7008; and Additional, 15,918, 15,919.

"13. The classification and arrangement of the large Collections of Papers of Sir Hudson Lowe

and the Marquis Gualterio are in an advanced state.

"14. The Additional Manuscripts (including the acquisitions up to December, 1854) have been arranged, numbered, prepared for the binder, and registered, from No. 19,078 to No. 20,005 inclusive, and bound, repaired, lettered, and stamped, from No. 19,531 to No. 19,947.

"15. The Additional Charters and Rolls have been numbered from No. 8516 to No. 8792 inclusive; registered from No. 6339 to No. 7500, and from No. 8471 to No. 8665; and stamped from No. 8482 to the same number.

"16. The Egerton Manuscripts have been arranged, numbered, prepared for the binder, and registered from No. 1624 to No. 1655 inclusive; and stamped from No. 1253 to No. 1336, and from No. 1620 to No. 1646.

"17. Two hundred and sixty-seven of the Additional Manuscripts have been folio'd.

"18. Stamps have been placed upon every tract, letter, or separate document, in 13 volumes of the Cottonian Collection, 1251 of the Sloane, 8 of the Harleian, 4 of the Old Royal, 2 of the Arundel, 105 of the Egerton, and 824 of the Additional Manuscripts, with 93 Books of Reference. The Charters and Rolls stamped are 2659 Harleian, and 185 Additional. The total number of stamps affixed amounts to 65,264.

"19. The Cottonian Manuscripts on vellum, marked Galba A. XVII.; Otho A. IV., XIII., and XVIII.; Otho C. IV., VII., XII., and XIV.; Otho D. II., V., and IX.; and Vitellius A. VII. (all of which were supposed to have been lost in the fire of 1731), have been identified, flattened, and inlaid; as also portions of 12 other Cottonian Manuscripts on vellum. The whole number of loose vellum leaves inlaid during the year amounts to 2541 and 1030 flattened, but not yet inlaid. Eighty-nine Original Letters of the Cotton family have also been recovered and repaired.

"20. The contents of several volumes have been re-arranged—namely, Cotton. Julius C. III. and Append. XLVI. (*olim* Add. 5907); Harl. 99, 4516, 4517, 7007, 7008; Sloane, 1301; Lansdowne, 860 A., and Additional, 15,925.

"21. The Inventories of the Select Manuscripts and of the Egerton Manuscripts have been verified, as have also the contents of 43 Cottonian, 25 Sloane, 123 Harleian, 20 Old Royal, 49 Lansdowne, 10 Egerton, and 91 Additional Manuscripts.

"22. Twenty Cottonian, 20 Sloane, 72 Harleian, 8 Old Royal, 4 Lansdowne, 2 Hargrave, 3 Arundel, 109 Egerton, and 532 Additional Manuscripts, with 93 Books of Reference, have been bound, repaired, or lettered; 283 Old Royal Manuscripts have been cleaned and furbished; and 288 Additional Manuscripts press-marked.

"23. The Additional Charters and Rolls have been cleaned, repaired, and marked, from No. 8482 to 8665 inclusive; together with 2659 Harleian Charters. Separate boxes have been made for those with fine Seals, as well as for 34 detached Seals.

"24. During the progress of the workmen in glazing the presses of the Saloon of the Department of MSS., about 19,000 volumes have been moved from their places, all of which have been restored to the presses without any interruption to the Reading-room service. The whole of the various collections have been thrice dusted and cleaned.

"25. The Additions made to the Department, in the course of the twelve months, are as follows:

To the General Collection—	
Manuscripts (including the Lowe and Gualterio Papers, estimated at 520 volumes)	906
Original Charters and Rolls . . .	695
Seals and Impressions	18
To the Egerton Collection—	
Manuscripts	20

"Among the acquisitions more worthy of notice may be mentioned:—

"The Official and Private Correspondence and Papers, originals or copies, of the late Lieutenant-General Sir Hudson Lowe, from 1799 to 1828, embracing the whole of the transactions during the period he was Governor of St. Helena, 1816—1821. It is calculated that these Papers, when bound, will form about 120 volumes.

"A large Collection of Papers purchased of the Marquis Gualterio of Florence, estimated to form about 400 volumes. These Papers include the original Official Correspondence of the Cardinal Filippo Antonio Gualterio, when Nuncio in France, 1700—1706, Legate *a Latere* in the Romagna, 1706, and Cardinal Protector of the English at the Papal Court, 1717—1728; as also of his nephew, Cardinal Luigi Gualterio, while Inquisitor of Malta, and Nuncio at Naples, 1750—1757.

"A Collection of 60 original Court Rolls and above 350 Charters, relating to the Counties of Sussex, Surrey, Suffolk, and Norfolk, extending from the reign of Henry III. to the 17th century, presented by C. W. Dilke, Esq.

"An interesting Collection of Drawings and Sketches by various artists, illustrative of New Zealand, the Loyalty Islands, &c., presented by Sir George Grey, K.C.B., late Governor of New Zealand.

"The Cartulary of the Priory of St. Nicholas, Exeter, on vellum, of the 13th century, with a short Chronicle prefixed, to the year 1328. This is the Cottonian MS. marked Vitellius D. IX., which was missing from the Collection when Dr. Smith published his Catalogue in 1696, and it is now at length restored to its place in the Cottonian Library.

"A very fine copy of the 'Historia Miscella,' comprising Eutropius, Paulus Diaconus, and Landulphus; together with the 'Historia Ecclesiastica' of Cassiodorus; on vellum, of the 12th century, folio.

"An extremely fine copy of the French translation of Crescentius, executed for Charles V. of France, in 1373, with 13 miniatures; on vellum, 15th century, large folio, from the MacCarthy and De Bure Libraries.

"Several early Greek Manuscripts on vellum, among which is one containing the Books of Judges and Ruth, of the 10th century; and another, containing the Acts of the Apostles, written A.D. 1054.

"Eight Armenian Manuscripts, including a copy of the Gospels, on cotton paper, written A.D. 1254; also several scarce works in Hebrew, Samaritan, Arabic, Turkish, Persian, and Hindustani.

"A beautiful copy of the Persian Poem entitled, 'Khawar Nama,' composed by Ibn Hassam, at the commencement of the 15th century, in praise of the exploits of Ali, son-in-law of Mohammed, illustrated with 157 well-executed miniatures. This copy was written at Moultan, A.H. 1097=A.D. 1686.

"Five folio volumes of the valuable Collections for the History of Essex, made by Thomas Jekyll, Secondary of the King's Bench, in the reign of Charles I.

"A considerable number of volumes relating to the History and Literature of Ireland, from the Library of the late Sir William Betham, including the original Entry-Books of Recognizances in Chancery and Statutes Staple, from the reign of Elizabeth to 1678.

"The original Account-Book of the Privy Purse Expenses of King Henry VIII. from November, 1529, to December, 1532, signed throughout with his own hand.

"The Autograph Deed of Agreement of Edmund Spenser, the Poet, of Kilcolman, County Cork, with a person named M'Henry, signed and sealed; 17 Autograph Poems and Letters of Robert Burns; and 15 original Letters of Fénélon, Archbishop of Cambray, 1703–1714.

"An Original Charter of Eudes, King of France, executed in the year 888 or 889, with the Seal *en placard*, finely preserved; also another Original Charter of Peter, Bishop of Beauvais, granted in 1123, with the Seal *en placard*.

"26. The number of deliveries of Manuscripts to Readers in the Reading Rooms, during the twelvemonth, amounts to 18,899, and to Artists and others, in the rooms of the Department, to 3378, exclusive of the numerous volumes examined by visitors.

The Report of the Keeper of the Department of Antiquities is also an interesting document, but it has important deficiencies for which he is not responsible:—

"*Department of Antiquities.*

"In the course of the last year, the alteration in the mode of lighting the South Side-Gallery has been completed.

"The Koyunjik Basreliefs have been arranged in the North Side-Gallery, and the room opened for exhibition.

"Many of the Egyptian Sculptures have been placed upon granite pedestals, and the remainder will be similarly mounted as rapidly as the material can be supplied.

"The new Gallery for Græco-Roman Sculptures has been completed, and the larger portion of the Mythological Series arranged in it upon the most generally received archæological system.

"The Basement-room beneath this Gallery is also completed, and the miscellaneous Sculptures of the Græco-Roman Collection are in process of arrangement.

"Rooms in the basement story for the exhibition of Roman and Etruscan Sepulchral Sculptures are in preparation.

"The Egyptian framed Papyri are in process of arrangement on the walls of the North-West Staircase, being thus for the first time exhibited to the public.

"The principal acquisitions made by the Department during the twelvemonth are the following:—

"*Egyptian.*—A mutilated Statue of King An, an early Egyptian monarch, erected by his descendant Sesortesen I., of the 12th dynasty; discovered on the site of Hadrian's Villa at Tivoli.

"The upper portion of the Statue of a monarch of the 28th dynasty, formed of Oriental Alabaster, presented by her Majesty the Queen.

"Sixteen Egyptian and Coptic Sepulchral Tablets, presented by Littleton Annesley, Esq.

"A complete Mummy Cloth, presented by A. Sussex Milbank, Esq.

"*Assyrian.*—A collection of engraved Cylinders, bearing Assyrian and Phœnician characters, found in various parts of Babylonia and Assyria.

"*Greek.*—An extensive collection of Marbles, Inscriptions, Vases, and other Antiquities from the Greek Islands, procured by C. Newton, Esq., Her Majesty's Vice-Consul, Mytilene.

"Two Marble Torsos, presented by Commander Spratt, R.N.

"A Marble Head from Athens, which may have belonged to one of the Metopes of the Parthenon, presented by his Grace the Duke of Devonshire.

"A Marble bust, found at Mytilene, presented by F. Werry, Esq., Her Majesty's Vice-Consul, Ben-Ghazi.

"A bronze Mirror, with its original stand, from Athens.

"A Bronze Figure of Mars, of very fine workmanship, from Chevalier Bunsen's Collection.

"*Roman.*—A set of Bronze Horse Trappings, found in Germany, and ornamented with Busts and other decorations of Silver.

"A small collection of Glass, with Gilt Ornaments and Inscriptions, from the Catacombs at Rome.

"A Glass Vessel of elegant form, found at Treves, presented by J. H. Anderdon, Esq.

"*British Collection.*—An extensive collection of Antiquities of the Celtic period, found in Ireland.

"Two Bronze Trumpets and other Antiquities, from the Collection of the late Mr. Crofton Croker.

"Six Bronze Weapons, found in the Thames.

"Two Bronze Torcs and Armlets, found in Dorsetshire, presented by T. M. Peniston, Esq.

"A Roman Pig of Lead, stamped with the name of Britannicus, the son of the Emperor Claudius, presented by James Williams, Esq., of Bristol.

"Roman and other Antiquities, found in Nor-

folk and Suffolk, presented by Greville J. Chester, Esq.

"A collection of Antiquities excavated in a Saxon Cemetery at Harnham, under the direction of J. Y. Akerman, Esq., presented by Viscount Folkestone.

"Saxon Antiquities, discovered at Stodmarsh and Wingham, in East Kent, presented by J. Y. Akerman, Esq.

"Saxon Urns, found in Lincolnshire, presented by the Rev. E. Trollope.

"An Ancient Counterfeit Seal of Henry II., King of England, found in Yorkshire, presented by the Honourable Captain Duncombe.

"Rings and other personal Ornaments, discovered in Worcestershire, with Coins of Henry II.

"A collection of Medieval Pottery, found in London.

"Ancient Encaustic Tiles, from various places, presented by the Rev. Dr. Wrench, the Rev. J. Byron, and Sir Walter C. Trevelyan, Bart.

"A specimen of early Chelsea Porcelain, presented by Sir C. Price, Bart.

"Sticks and Ball for playing the ancient game of Pall Mall, presented by George Vulliamy, Esq.

"*Medieval.*—A Crozier, Reliquary, and Morse, of Limoges enamel.

"A fine specimen of Italian Majolica, painted by Xanto.

"Three Dishes of early Spanish Majolica.

"A Venetian Glass Tazza.

"The Twelve Sybils, enamelled on Copper, by Leonard Limousin.

"Three *Viatoria*, or Pocket Sun Dials.

"*Ethnographical.*—A very extensive and fine collection of objects from New Zealand, including many Relics of historical interest, presented by his Excellency Sir George Grey.

"Ornaments of Feathers from the Valley of the River Amazon, presented by Richard Carruthers, Esq.

"An Earthen Vessel, found in a Mound on the Mississippi, presented by James Dick Hill, Esq., of New Orleans.

"Moulded Bricks, from an ancient Temple at Agra, presented by Sir Richard Westmacott, R.A.

"The total number of acquisitions in the Section of Antiquities is 1639, of which about 100 are not yet registered.

Coins and Medals acquired during the Year 1854.

	Gold.	Silver.	Copper.
Greek... ...	12 ...	100 ...	165
Roman ...	4 ...	8 ...	55
Byzantine ...	2 ...	... ...	22
Oriental ...	114 ...	446 ...	17
Modern ...	48 ...	437 ...	348
	180	991	607=1778

Of these, only 143 remain unregistered.

"In the Greek series the following may be specified as among the most important acquisitions:—A Gold Stater of Seleucus I., of high rarity, not previously existing in the Museum Collection; a rare and fine Copper Coin of Colone in the Troad; many new types of Copper and Silver Coins of towns in Lesbos, Ionia, and Caria, particularly a new and very remarkable Silver Coin of Termera, a town in the province last mentioned; a fine Tetradrachm of Rhodes, and one of the Island of Cos. Several new and fine specimens have been added to the series of Sub-Parthian Coins, especially a Tetradrachm of an unascertained King.

"To the Oriental series have been added several Gold Coins of the Mamluk Sultans of Egypt, a large number of those of the Kings of Saurastrán, and a considerable collection of the Money of various dynasties, including some Coins previously unknown.

"In the Modern series, the Saxon and English Collections have received extensive and highly important additions from the sale of the late Mr. Cuff's Collection. Among these may be particularized the celebrated Pattern Crown of Henry VIII. A fine Collection of early Hungarian Coins has also been acquired, as well as three rare specimens of the Money of the Vandal Kings of Carthage, namely, a Quinarius of Huneric, and another of Thrasamund, with a Denarius of Gunthamund."

The reports of the natural history officers give accounts of the number of specimens added to the collection, and speak of their importance as types, but it is useless to count these up with the diligence of a Cocker, and leave so many of them without names, and consequently without any sort of typical value to the naturalist.

On looking over the estimates for the present year, we are glad to see 1000*l.* set down for the expenses of a Photographic Room, but, on the other hand, only 2500*l.* is estimated for the purchase of Foreign Books, while 7500*l.* is required for book-binding; and 500*l.* less than last year is set down for the purchase of Antiquities. While Parliament and the people, seeing the great and growing results of scientific research, and the pleasures that accompany the intelligent pursuit of literature and art, are disposed to aid in their advancement, let us hope that the principle which has begun to develope itself in the new administrative constitution of the National Gallery will spread to that of the British Museum. We want a Board of Science more limited in number and more competent to deal with scientific matters, and the same with respect to literature and antiquities.

An Account of the Appropriation of Grants, amounting in the Aggregate to 5000*l.*, *placed, by order of the Treasury, at the Disposal of the Royal Society, between the Years* 1850 *and* 1854. By Order of the House of Commons.

Although the spirit of administrative regeneration has not yet penetrated the walls of the British Museum, it is pleasant to hear from the lips of one of Her Majesty's ministers, presiding over a great scientific congress, his opinion that "the influence, if not the authority of the State may be most beneficially exerted in behalf of science." The cloud that for a moment darkened the relation between the scientific men of this country and the Government has been dispelled by the renewal of the national bounty, and we are assured by the minister to whom the assembled *savans* of the United Kingdom are now paying the homage of their respect, that it is the intention of the Premier "to bring the principle of some expenditure in this direction specially under the notice of Parliament for the future." It is not worth while to recur to the proceedings of the Treasury in summarily withholding the grant, but we may give the letter of the President, which vindicated the independence of the Society, and add with satisfaction the particulars, which show how the money hitherto granted has been appropriated:—

Lord Wrottesley, President of the Royal Society, to James Wilson, Esq., M.P.

"The Royal Society, Somerset House, 28th July, 1855.

"Sir,—I have the honour to acknowledge the receipt of your letter of the 28th June, in which you state that the Government are not prepared this year to place 1000*l.* at the disposal of the Royal Society, and assign reasons for such determination.

"With regard to the fund out of which the grant has hitherto been paid, the Council of the Royal Society were ignorant, until the receipt of your communication, that the advance in question proceeded from the source you mention, and I am sure that they would very much prefer that it should for the future be voted by Parliament in the way which you propose.

"With respect to the terms of the advance, I have the honour to refer you to the letter of Lord John Russell, transmitted at the time when the grant was first bestowed, as the best evidence on that point.

"I must be permitted to observe, that your letter seems to have been written under a misapprehension of the relation of the Royal Society to the Government in relation to the grant in question.

"The Royal Society has ample funds of its own to meet its own expenses, and the Council neither require, nor have they solicited or received, aid from Government for the purpose of carrying out any of the objects which it more especially devolves upon them to execute, as representing the Society. In conformity with Lord John Russell's letter, already referred to, the Council considered the Government grant as a contribution on the part of the nation towards the promotion of science generally in the United Kingdom, regarding themselves as trustees of the grant, and accountable to the public for its due administration as long as it should be continued. They appointed a Committee of about forty gentlemen of principal eminence in the different branches of science, to whom all applications for assistance from the Government grant were referred, and by whose advice the Council have been aided in its appropriation. The mode in which the Council have hitherto performed their trust will appear from the enclosed paper, detailing the distribution of the 5000*l.* which has been already received.

"It is right also that I should explain, that the money devoted to the various researches specified in this paper, has been expended solely in instruments, materials, or other appliances required in performing the experiments and investigations which are severally described, and that by the aid of this contribution, the Government has in fact obtained for the advancement of science and the national character, the personal and gratuitous services of men of first-rate eminence, which without this comparatively small assistance would not have been so applied.—I have, &c.

"Wrottesley, *President R. S.*"

For the Year 1850.

"1. For the publication of the Observations made at the Armagh (private) Observatory for the re-observation of Bradley's Stars, the work so published to be the property of Her Majesty's Government, 350*l.*

"The printing of this work is still in progress, and will shortly be completed.

"2. For the publication of Vol. I. of the Catalogue of Ecliptic Stars, observed at the Markree (private) Observatory, the work so published to be the property of Her Majesty's Government, 150*l.*

"This work has been printed, and the greater part of an impression of 500 copies presented, in the name of the British Government, to public institutions at home and abroad, and to individuals cultivating Astronomy in this and other countries, under the direction of a committee consisting of Sir John Herschel, the Astronomer Royal, and the Superintendent of the Nautical Almanack. The remainder of the impression is on sale at a low price, the proceeds to be credited to Her Majesty's Government.

"3. To Charles Brooke, Esq., to be employed in the construction of an instrument for the Autographic Registry of the variations of the Terrestrial Magnetic Force, corrected for temperature, 100*l.*

"This instrument was completed, and exhibited in the Great Industrial Exhibition for 1851.

"4. To T. Wharton Jones, Esq., to be employed in assisting him in investigations in Inflammation, 100*l.*

"These investigations were in continuation of an inquiry in which Mr. Jones had been for some time engaged, and for which he had obtained, in 1850, the triennial prize of 300*l.* founded by Sir Astley Cooper. Their continuation has led to further publications in the Philosophical Transactions, and in the Medico-Chirurgical Transactions, and is still in progress.

"5. To Professor Owen, to have Drawings made of undescribed or unfigured parts of the Skeleton of the Megatherium, 100*l.*

"The Drawings have been made, and are deposited at the Royal Society, accompanied by a Memoir drawn up by Professor Owen, part of which has been published in the Philosophical Transactions, and the remainder is now in course of publication.

"6. To Lieutenant-Colonel Sabine, for the purchase of Magnetical and Meteorological Instruments of a new construction, for trial of their merits at the Kew Observatory. The instruments to be the property of Her Majesty's Government, 100*l.*

"These Instruments were purchased, and their merits examined at the Kew Observatory. The results of the examination have been published in the Transactions of the British Association.

"7. To Dr. Stenhouse, to assist his researches into the chemical relations subsisting amongst the various genera of Plants, 100*l.*

"This grant produced a valuable paper 'On the action of Nitric Acid on various Vegetables,' which was published in the Philosophical Transactions; and the full amount of the grant was subsequently replaced by Dr. Stenhouse at the disposal of the Committee, and became the subject of a fresh appropriation in 1853.

For the Year 1851.

"1. To Dr. Thurnam, to assist in procuring exact Drawings of Crania of early British races, 50*l.*

"The Drawings have been made, and are deposited, with an accompanying Memoir, at the Royal Society.

"2. To Professor Stokes, for experiments to determine the Index of Friction in different Gases, 175*l.*

"These experiments are in progress at the Kew Observatory, under Professor Stokes's direction.

"3. To Dr. Hofmann, for a continuation of his investigations respecting Organic Bases, 100*l.*

"These investigations were in continuation of researches of which the results were published in the 'Philosophical Transactions,' and for which a Royal Medal was awarded. They are regarded by chemists as extremely important, and are still in progress.

"4. To the Astronomer Royal, for the reduction and publication of the late Rev. T. Catton's Astronomical Observations, 50*l.*

"These Observations, extending from 1791 to 1832, have been reduced, and the results published in the 'Transactions' of the Royal Astronomical Society.

"5. To John F. Miller, Esq., of Whitehaven, to obtain Observations on the Fall of Rain, and on the Minimum Temperature in Winter, at several stations in the Lake District of England, 50*l.*

"These Observations have been communicated to the Royal Society, and the results have been published in 'Reports on the Meteorology of the Lake District,' by Mr. Miller.

"6. To Dr. W. B. Carpenter, for the execution of Drawings of Foraminifera, collected on the Australian Coast during the Surveying Expedition of Her Majesty's ship *Fly*, 25*l.*

"These Drawings have been deposited at the Royal Society, and have served, together with similar drawings, procured by grants in 1852 and 1854, as data from which Dr. Carpenter has drawn up an important monograph on this class of animals, which will be published in the forthcoming volume of the 'Philosophical Transactions.'

"7. To Leonard Horner, Esq., for the analysis of specimens of the Water of the Nile and of the Soil at different depths in the Valley of the Nile, which had been procured by the aid of a grant from the Donation Fund of the Royal Society, 50*l.*

"The results of this analysis have been published in the 'Philosophical Transactions.'

"8. To William Hopkins, Esq., of Cambridge, for investigations on the Effect of Pressure on the Temperature of Fusion of certain substances, 250*l.*

"These important experiments, in which Mr. Hopkins has been assisted by Messrs. Fairbairn and Joule, of Manchester, are still in progress. A report of the results hitherto obtained is expected to be presented to the Royal Society at its next Session.

"9. To Dr. Miller, Mr. Gassiot, and Colonel Sabine, representing the Kew Committee of the British Association, for the Construction and Verification of Standard Meteorological Instruments, 150*l.*

"By the aid of this and a subsequent grant of equal amount in 1853, the Kew Committee have been enabled to meet satisfactorily the extensive applications which have been made to them by the Governments of our own country and of the United States, to provide and verify Meteorological Instruments required for the Marine Meteorological Researches undertaken by those Governments, with a view to the interests of Trade and Navigation, as well as to those of General Science.

"10. To Professor Owen, to defray the cost of Drawings of undescribed and unfigured Fossils from South America and Australia, 100*l.*

These Drawings have been executed, and are in number 72.

For the Year 1852.

"1. To Professor William Thomson, of Glasgow, for experimental researches in several branches of Electrical Science, 50*l.*

"This grant, as well as a subsequent one of 50*l.* in 1853, was designed to assist in furnishing apparatus for various electrical researches, in which Professor Thomson was engaged. The results, as far as they have yet been obtained, have been communicated to the Royal Societies of London and of Edinburgh, and published in their 'Transactions,' and in other scientific journals. The researches are still in progress.

"2. To Dr. Tyndall, for experimental researches in the Diathermic and Conductive capacities of Crystalline and other Bodies, 50*l.*

"This money has been expended in providing apparatus for the experimental researches referred to. The results, so far as they have been yet obtained, have been published in papers in the 'Philosophical Transactions,' and the researches are still in progress.

"3. To Professor Williamson, for experimental investigations into the Law of the Chemical Action of Masses, 100*l.*

"The experiments are in progress, and the results hitherto obtained will shortly be communicated to the Royal Society.

"4. To Mr. Joule, of Manchester, for experiments on the effects of Magnetism on the Dimensions of Iron and Steel Bars, 30*l.*

"These experiments are still in progress.

"5. To Mr. John A. Dale, of Balliol College, Oxford, for experiments on the relation of Metals with each other, and with Liquids in the Voltaic Circuit, 50*l.*

"These experiments are still in progress.

"6. To Professor Owen, for obtaining Anatomical Drawings of undescribed existing and extinct Animals, 100*l.*

"Drawings, in number 43, have been executed, and part of the grant yet remains to be similarly applied.

"7. To Dr. Miller, Mr. Gassiot, and Colonel Sabine, for the construction and verification of Standard Meteorological Instruments, 150*l.*

"*See* Note to a similar appropriation in 1851 (No. 9).

"8. To Henry Gray, Esq., for investigations concerning the Spleen, 100*l.*

"The results of these investigations are published in an Essay on the Spleen, for which the triennial Astley Cooper prize of 300*l.* was awarded in 1853.

"9. To Professor Beale, for investigation into the Chemistry of Morbid Products, 50*l.*

"This investigation is still in progress.

"10. To Dr. Carpenter, for the execution of Drawings of Foraminifera, 25*l.*

"*See* Note to a similar appropriation in 1851 (No. 6).

"11. For the publication of Vol. 2 of the Markree Catalogue of Ecliptic Stars, 130*l.*

"Vol. 2 has been published, and the edition of 500 copies disposed of, as in the case of Vol. 1 (1850, No. 2).

"12. To Professor William Thomson and Mr. Joule, for experiments on the Thermal Effects experienced by Fluids in passing through small Apertures, 100*l.*

"The experiments referred to in this, and in subsequent grants of 100*l.* in 1853, and of 200*l.* in 1854, are still in progress. A memoir describing part of the results obtained has been presented to the Royal Society, and printed in the 'Philosophical Transactions.'

"13. To Dr. Frankland, for investigations into Organo-metallic Compounds, 65*l.*

"The results of this investigation have been communicated to the Royal Society in a memoir, which will appear in the forthcoming volume of the 'Philosophical Transactions.'

For the Year 1853.

"1. To. Dr. Waller, for investigating the results of the Section of Nerves, 100*l.*

"An interim report of the progress of this investigation has been received by the Royal Society.

"2. To Dr. James Thompson, C.E., of Glasgow, and Mr. Fairbairn of Manchester, for experiments on the Friction of Discs revolving in water, for the purpose of obtaining data required in calculations relating to Turbine Water Wheels and Centrifugal Pumps, 50*l.*

"The results already obtained have been communicated to the Royal Society, and preparations have been made for renewing the experiments on a more extended scale.

"3. To Captain Lefroy, for the expenses of preparing for publication Observations on the Aurora Borealis made in North America, 20*l.*

"The Observations have been in great measure prepared for publication.

"4. To Warren De la Rue, Esq., for mounting the Huygenian Object-glass of 123 feet focal length, 250*l.*

"This, with an appropriation of equal amount in 1854, was designed to meet an application made to the Royal Society by M. Struve, of St. Petersburg, to compare the appearance of Saturn as shown by the Huygenian Lens referred to, with that of the planet as seen in telescopes of modern date, in consequence of Huygens' representation of the ring not according with its appearance as now observed. Difficulties have been met with in carrying out this object in the method first proposed, which have occasioned delay; and the subject now stands for re-consideration.

"5. To Professor William Thomson, of Glasgow, for experiments on the Thermal Effects of Electric Currents in unequally heated Conductors, 50*l.*

"*See* Note to a similar appropriation in 1852 (No. 1).

"6. To Professor William Thomson and Mr. Joule, for continuing the experiments on the Thermal Effects experienced by Fluids in passing through small Apertures, 100*l.*

"*See* Notice to a similar appropriation in 1852 (No. 12).

"7. To Dr. Marcet, for Expenses connected with his researches on the Excretions of Men and Animals, 50*l.*

"The results were communicated in a paper presented to the Royal Society, and printed in the Philosophical Transactions.

For the Year 1854.

"1. To Robert Mallet, Esq., C.E., Dublin, for experiments on Earthquake Waves, 150*l.*

"The apparatus for these experiments was prepared by means of a grant from the British Association. The experiments are proposed to be made at Holyhead, when a fitting time is arrived in the progress of the harbour Works at that station.

"2. To Dr. Marcet, for a continuation of his researches on the Excretions of Men and Animals, 50*l.*

"*See* Note to a similar appropriation in 1853 (No. 7).

"3. To Professor Eaton Hodgkinson, for experiments on the Strength of Materials, 100*l.*

"This appropriation has been augmented by a gift of 300*l.* from Robert Stephenson, Esq., C.E. The experiments are in progress.

"4. To Dr. Tyndall, for experimental researches in Heat and Magnetism, 100*l.*

"The results of a part of these researches have been presented to the Royal Society, and will be published in the forthcoming volume of the Philosophical Transactions.

"5. To Dr. Woods, of Parsonstown, Ireland, for experimental researches on the Heat developed in the oxydation of certain Metals, 20*l.*

"The experiments are in progress, and an interim report has been presented to the Royal Society.

"6. To Professor William Thomson, of Glasgow, and Mr. Joule, of Manchester, for experimental researches on Fluids in Motion, and on the Thermal Effects experienced by Fluids in passing through small Apertures, 200*l.*

"*See* Note to an appropriation for the same purpose in 1853 (No. 12) and in 1853 (No. 6). A memoir containing the results of these researches, so far as they have yet been completed, has been presented to the Royal Society, and printed in the Philosophical Transactions.

"7. To Warren De la Rue, Esq., for mounting the Huygenian Object-glass, 250*l.*

"*See* Note to a similar appropriation in 1853 (No. 4).

"8. To T. H. Huxley, Esq., for the publication of his Zoological Researches, 300*l.*

"Mr. Huxley was employed under the orders of the Admiralty in a surveying expedition under Captain Owen Stanley, during which these researches were made. On his return he contributed two memoirs to the Royal Society, for which the Royal Medal was awarded him. They were printed in the Philosophical Transactions. The publication of the whole of his researches has been strongly recommended by the highest authorities in this branch of science, and will be accomplished by this grant. The work itself will be the property of Her Majesty's Government, and will be distributed in a manner analogous to that of the Markree and Armagh Star Catalogues.

"9. For the publication of Vol. 3 of the Markree Catalogue of Ecliptic Stars, 132*l.* 1*s.* 7*d.*

"Vol. 3 has been published, and the edition disposed of as already described in the cases of Vols. 1 and 2.

"10. To Dr. W. Carpenter, for completing the Illustrations of Typical Forms of Foraminifera, 50*l.*

"*See* Note to an appropriation for the same purpose in 1851 (No. 6).

"11. To Nevil Maskelyne, Esq., of Oxford,

for chemical researches on the solid Oils and Waxes of the Vegetable Kingdom, 100*l*.

"These researches are in progress.

"12. To Dr. Pavy, for continuing experimental researches on the Physiology of the Blood, of which a part has been recently communicated to the Royal Society, 50*l*.

"These researches are in progress.

"13. To Professor William Thomson for experiments in the Thermal Effects of Electric Currents in unequally heated Conductors, 50*l*.

"The experiments are in progress."

Several of the works undertaken in consideration of the foregoing bounty are only in progress, and the continuance of the vote has been depended upon for their completion. The Society had actually distributed more than the amount received. Now, however, that the matter has been brought fairly before the Legislature, no further anxiety need be entertained,

It may be as well to remind the Royal Society that this annual grant of money for the purposes of science, having become a public question, an account of its appropriation should be furnished in each year without the interposition of Parliament.

Lyra Germanica: Hymns for the Sundays and Chief Festivals of the Christian Year. Translated from the German by Catherine Winkworth. Longman and Co.

In 1833 the Chevalier Bunsen published a collection of the hymnologyof Germany, under the title 'Versuch eines allgemeinen Gesang und Gebetbuchs.' From the nine hundred lyric pieces in that work, about a hundred are selected and translated into English metre by Catherine Winkworth. Among these are many of the best known and most favourite hymns of the Lutherans, some of which are in common use in churches, while others are found in most manuals of devotional poetry. In Germany the singing of hymns forms a more prominent part of public worship than in our own services. The influence of poetry has there also been more conspicuous in the history of the Reformation. By means of hymns, embodying scriptural truth, and adapted for popular use, Luther and the reformers spread their tenets rapidly among the common people. When the old Latin hymns of the Catholic Church retained apostolic teaching, they were translated, and adapted to familiar national melodies. Metrical versions of the Psalms, and of other portions of Scripture, were also provided for the Protestant churches, and the use of these has materially aided in keeping alive evangelical truth, notwithstanding the sceptical and neological corruption that has so much prevailed in the theological schools and the universities of Germany. The introductory preface to the present volume contains a very interesting sketch of the history of German hymnology, with notices of some of the more remarkable pieces in this selection. Some of the poems are of great antiquity, besides those ancient hymns, such as the 'Veni Sancte Spiritus,' of the Latin Church:—

"The hymn, 'In the midst of life,' is one of those founded on a more ancient hymn, the 'Media in vita' of Notker, a learned Benedictine of St. Gall, who died in 912. He is said to have composed it while watching some workmen, who were building the bridge of Martinsbruck at the peril of their lives. It was soon set to music, and became universally known; indeed it was used as a battle-song, until the custom was forbidden on account of its being supposed to exercise magical influences. In a German version it formed part of the service for the burial of the dead, as early as the thirteenth century, and is still preserved in an unmetrical form in the burial service of our own Church.

"The carol, 'From Heaven above to earth I come,' is called by Luther himself, 'a Christmas child's song concerning the child Jesus.' He wrote it for his little boy Hans, when the latter was five years old, and it is still sung from the dome of the Kreuzkirche in Dresden before day-break on the morning of Christmas Day. It refers to the custom then and long afterwards prevalent in Germany, of making at Christmas-time representations of the manger with the infant Jesus. But the most famous of his hymns is his noble version of the 46th Psalm, 'God is my stronghold firm and sure,' which may be called the national hymn of his Protestant countrymen. Luther's hymns are wanting in harmony and correctness of metre to a degree which often makes them jarring to our modern ears, but they are always full of fire and strength, of clear Christian faith, and brave joyful trust in God.

"From his time there has been a constant succession of hymn-writers in the German church. Paul Eber, an intimate friend of Melancthon, wrote for his children the hymn, 'Lord Jesus Christ, true Man and God,' which soon became a favourite hymn for the dying. Hugo Grotius asked that it might be repeated to him in his last moments, and expired ere its conclusion. Another hymn of the same class is, 'O weep not, mourn not, o'er this bier,' the 'Jam mœsta quiesce querela' of Prudentius II., translated by Nicholas Hermann, the pious old precentor of Joachimsthal, a hymn long sung at every funeral.

"The terrible times of the Thirty Years' War were rich in sacred poetry. Rist, a clergyman in North Germany, who suffered much in his youth from mental conflicts, and in after years from plunder, pestilence, and all the horrors of war, used to say, 'the dear cross hath pressed many songs out of me,' and this seems to have been equally true of many of his contemporaries. It certainly was true of Johann Heermann, the author of some of the most touching hymns for Passion Week, who wrote his sweet songs under great physical suffering from ill health, and amidst the perils of war, during which he more than once escaped murder as by a miracle. So too the hymns of Simon Dach, professor of poetry in the University of Konigsberg, speak of the sufferings of the Christian, and his longing to escape from the strife of earth to the peace of heaven.

"But the Christians of those days had often not only to suffer, but to fight for their faith, and in the hymns of Altenburg and von Löwenstern we have two that may be called battle-songs of the church. The former published his hymn, 'Fear not, O little flock, the foe,' in 1631, with this title: 'A heart-cheering song of comfort on the watchword of the Evangelical Army in the battle of Leipsic, September 7th, 1631, God with us.'

* * * *

"THE BATTLE SONG OF GUSTAVUS ADOLPHUS.

"Fear not, O little flock, the foe
Who madly seeks your overthrow,
Dread not his rage and power:
What though your courage sometimes faints,
His seeming triumph o'er God's saints
Lasts but a little hour.

"Be of good cheer; your cause belongs
To Him who can avenge your wrongs,
Leave it to Him our Lord.
Though hidden yet from all our eyes,
He sees the Gideon who shall rise
To save us, and His word.

"As true as God's own word is true,
Not earth or hell with all their crew
Against us shall prevail.
A jest and byword are they grown;
God is with us, we are His own,
Our victory cannot fail.

"Amen, Lord Jesus, grant our prayer!
Great Captain, now Thine arm make bare;
Fight for us once again!
So shall Thy saints and martyrs raise
A mighty chorus to Thy praise,
World without end. Amen."

We must return to this interesting collection of German Lyrics in our next.

NOTICES.

Sisters of Charity, Catholic and Protestant, abroad and at home. By Mrs. Jameson. Longman and Co.

The proposal of establishing an hospital under the superintendence of Miss Nightingale, has given a practical turn to questions in which popular sympathies have of late been enlisted in this country. The employment of women, of a better class than ordinary paid nurses, in hospitals and other charitable institutions, is at present much advocated. The object of Mrs. Jameson in this book, the substance of which was read some months ago in the form of a lecture, is to show that much good could be effected by organizing the abundant labour and willing charity of English females, as has long been done in the sisterhoods, Protestant as well as Catholic, of foreign countries. The historical and statistical notices of the chief orders of the kind in different parts of Europe, will afford useful guidance in the establishment of similar associations in England. We believe that much may be done in the way of training for such voluntary services, and by association of labour, instead of by isolated and unsystematic charity. These movements will in this country, however, always be chiefly local in their organization and influence, the national habits and feelings, and the spirit of all our institutions being averse to much centralization, except it were in connexion with some existing establishment, such as the Church of England. The primitive and apostolic order of deaconesses might be revived in office if not in name, and women might under our parochial system find a definite and organized field for charitable exertion. But whether under ecclesiastical or medical superintendence, the proposal for organizing female labour and benevolence is an important social object. Mrs. Jameson's lecture contains much practical information derived from the experience of such associations abroad, and also shows that there is ample scope in this country for similar institutions. The census returns give a great superfluity of females in the population, as much as 104 to 100, or 500,000, in the whole community. If only two in a hundred of this surplus female population were willing or suitable for the work, there would be a staff of 10,000 sisters of mercy or charity. If these were properly trained and wisely organized, what an amount of practical good would they effect throughout the country, even if their labours were confined to hospitals and other public institutions. Mrs. Jameson's book presents the whole subject in a plain and earnest manner, and we trust it will be widely circulated.

Fugitive Poems. By Tristram. Hardwicke.

The author of this volume is deficient in the literary skill which is acquired by experience and the study of good models, but there is in some of the pieces a true poetical feeling, with occasional force of description. Of this kind are the lines entitled 'Vision of Childhood:'—

"I stood upon that old memorial rock,
The haunt of childhood in its happiest hour,
The waves ran high, and from the watery shock,
Shrieked the sea furies from their ocean bower;
And the winds howled, and fiercely in their wrath
Flung the sea foam o'er many a briny path.
Old Ocean's cheek seemed furrowed with his woes,
And madly all from his tumultuous roar
The tortured seaweed from its depths arose;
Peered thro' the brine, and sank to rise no more.
I do remember, at my infant feet,
Which even thus early loved to linger there,
The bellowing surges shattered into sleet,
'Gainst the broad rock that breasted their despair,
And to this hour the picture of their toil
Such as it was on that tempestuous day,
Their height, their hue, their rushing and recoil,
Cleaves with a force that challenges decay."

In the first poem, on 'The Minstrel,' there are also some very good lines of descriptive poetry.

The Angler's Song Book. Compiled and edited by Robert Blakey. Cox.

Mr. Blakey, the author of 'The History of the Philosophy of Mind,' 'The History of Moral Science,' and other works of learning and research, is also known as a welcome writer on field sports. His manual on shooting is one of the best books of the class; and he has published several works

on angling which have proved serviceable to many a lover of the rod among 'The Rivers and Lochs of Scotland,' 'The Rivers and Lakes of England and Wales,' and 'The Angling Rivers of France and Belgium.' As might be expected in a scholar, he delights in the literature of field sports, and having already written a historical sketch of angling literature in all nations, he is preparing for the press a treatise on the Philosophy and Literature of Hunting and of Field Sports. The present little volume contains a collection of songs connected with angling, from the times of Isaac Walton down to the days of Christopher North and Sir Humphrey Davy. The first piece in the book is by John Dennys in 1613 :—

"When fair Aurora rising early shows
Her blushing face beyond the eastern hills,
And dyes the heavenly vault with purple rewes,
That far abroad the world with brightness fills;
The Meadows green are hoare with silver dews,
That on the earth the sable night distils,
And chanting birds with merry notes bewray
The near approaching of the cheerful day.

"Then let him go to river, brook or lake,
That loves the sport, where store of fish abound,
And through the pleasant fields his journey make,
Amidst sweet pastures, meadows fresh and sound,
Where he may best his choice of pastime take,
While swift Hyperion runs his circle round;
And as the place shall to his liking prove,
There still remain, or further else remove."

Extracts from Milton and Pope and Gay find place among rougher ballads and doggrel rhymes of modern date. Some of the latter might have been omitted, but the compiler probably thought it necessary to provide reading for anglers of various tastes. Anglers are on the whole a contented race, not likely to be critical. Mr. Blakey's book of fishing songs will be received by brother anglers with sympathy and thankfulness, while general readers will be pleased with the descriptions of natural scenery and of rural pleasures in many of the pieces.

Cornish's Stranger's Guide through Birmingham. Ninth edition, improved and enlarged. Cornish Brothers.

CORNISH'S Birmingham Guide is one of the most complete and elaborate books of its class. It gives an account of the general features of the town, and describes its public buildings, its religious, educational, and charitable foundations, its literary and scientific institutions, and its manufactories. The advertisements appended to the volume give a wonderful idea of the variety and energy of industrial art in Birmingham, and the classified index of these announcements forms a copious directory to the manufactories, the different classes of which are briefly described in the handbook. A map and numerous engravings illustrate the volume. The publishers announce a 'Guide to Places of Interest in the Midland Counties,' which can be most readily reached from Birmingham, which will be an acceptable work.

SUMMARY.

No. II. of tracts on *The Moral Theology of the Church of Rome* (J. and C. Mozley), treats of certain points in S. Alfonso de Liguori's 'Moral Theology,' in letters by the Rev. H. E. Manning, and the Rev. F. Meyrick. Mr. Meyrick maintains that the Jesuit doctrine of equivocation is inconsistent with truthfulness, and therefore immoral. Mr. Manning takes the opposite side, as no Englishman of healthy moral feeling, unless poisoned by Roman tracts, could do. The chief part of the controversy, which is carried on in a series of letters, relates to the teaching of Liguori on the relative character of different kinds of stealing, the guilt of which is set down by him in graduated scales, according to the motive of 'the taker,' his position in life, the amount taken, and the circumstances of the person from whom it is taken. Mr. Manning endorses and defends all the crafty Jesuit's propositions, while Mr. Meyrick, calling things by their right names, affirms that a thief is a thief and a theft a theft, whatever the amount stolen or the degree of injury done by the taker. Ligouri says that a wife may assist her relations out of the property of her husband, without his consent; and a servant may pilfer from an employer who does not allow him wages adequate to his service. All this villany is ably exposed by Mr. Meyrick, but with great tenderness of feeling and urbanity of expression towards his friend Mr. Manning, whom he sincerely pities, as an unconscious and deluded victim of the system, into the vortices of which, on his secession from the Church of England, he unhappily threw himself. Yet Mr. Manning might have been a good son of the Church of Rome, without outraging all the common feelings of morality, and searing his conscience by adopting the Jesuit code of ethics. Pascal's 'Provincial Letters' might have shielded a scholar like Mr. Manning from such degradation. As might be anticipated, the subtleties of a written controversy have little effect on his opinions, but we have yet hope that the instincts of an English gentleman, and the latent convictions of a Christian minister, will enable him to throw off 'the perilous stuff' that has produced so diseased a state of mind and heart.

The first volume is published of a new edition, the eighth, of *Hallam's Constitutional History of England* (Murray). This edition of the 'History of England' is similar in form to the recently published edition of the 'History of the Middle Ages,' and like it will be completed in three volumes.

In the Annotated Edition of the English Poets, edited by Mr. Bell (John W. Parker and Son), volume sixth of *Chaucer's Poetical Works* contains the continuation of Troylus and Cryseide, Chaucere's Dreme, Chaucere's A. B. C., the Boke of the Duchesse, the House of Fame, and other poems, with brief historical prefaces and illustrative footnotes.

In Routledge's series of original novels is given *Adrien, or Parent Power*, a tale by Annette Marie Maillard, and in the Parlour Library (Hodgson) *Merkland*, by the author of Margaret Maitland.

An American work, *Modern Mysteries Explained and Exposed* (London: Trubner and Co. Boston: Jewett and Co.), by the Rev. A. Mahan, First President of Cleveland University, contains copious statements and elaborate refutations of pretended spiritual revelations by which many people in the United States have been deluded. Amidst much matter, less interesting to English readers than to those who witnessed the 'manifestations' on the spot, there are some curious physiological and psychological questions discussed by Mr. Mahan. One part of the volume is devoted to an examination and exposure of the pretended revelations and other mysteries of the system of Emanuel Swedenborg.

A useful little manual, compiled from the pages of Waddington, Hook, Churton, and Wordsworth, and from the older works of Cave and Bingham, is entitled *A Brief History of the Christian Church*, from the first century to the Reformation, by J. S. Bartlett (J. H. and J. Parker). A brief biographical memoir of a christian child, under the title of *Little Footprints on the Old Church Path* (J. H. and J. Parker), is recommended to christian mothers by the Rev. William Sewell.

A series of sketches of life and character, chiefly in what may be called "the religious world" of the United States, is entitled *Peeps from a Belfry, or the Parish Sketch Book* (Trübner and Co.), by the Rev. F. W. Shelton, author of several works of popularity among his countrymen. The present volume will be perused with interest by English readers, from the general tenor of the sketches, as well as the national peculiarities which they incidentally illustrate. Another American book on a subject of more than ordinary interest, is *Joy and Care, a Friendly Book for Young Mothers*, by Mrs. L. C. Tuthill (New York, Scribner: London, Trübner and Co). Some of the remarks about the management and training of children are less appropriate to this country, but the greater part of the book is of universal application, both as regards physical development and mental or moral training. A sensible English mother will gather useful hints from the experience and advice of Mrs. Tuthill.

LIST OF NEW BOOKS.

Adams's (H. G.) Story of the Seasons, 2nd edit., 16mo, 1s.6d.
Anderson's (C.) Annals of the English Bible, 2 vols., £1 10s.
Bailey's (T.) Annals of Nottinghamshire, 4 vols., 8vo, £3 2s.
Baker's (T.) Law Relating to Burials, 12mo, cloth, 5s.
Bigland's System of Geography, 12mo, bound, 14th ed., 2s.6d.
Brande's (Rev. B.) Sermons, crown 8vo, cloth, 2s.
Century of Acrostics, crown 8vo, cloth, 2s. 6d.
Chambers' Educational Course; Medieval History, 3s. 6d.
——— Exercises in Algebra, 2s. 6d.
Doran's Queens, 2nd edition, 2 vols., post 8vo, cloth, £1 1s.
Doyle's (M.) Agricultural Labourer, 8vo, cloth, 3s. 6d.
Elliott's (E.) Blenham, crown 8vo, cloth, 6s.
Gleig's (Captain) Crimean Enterprise, cr. 8vo, cloth, 2s. 6d.
Glenny's (G.) Handbook to Flower Garden, cr. 8vo, 5s. 6d.
Handbook of Portugal, post 8vo, cloth, 7s. 6d.
Henderson (Dr.) on Ezekiel, 8vo, cloth, 10s.
Landmarks of History, Middle Ages, 12mo, cloth, 2nd ed., 3s.
Lizzie Lee, 12mo, boards, 2s.
Our Christian Calling, 18mo, cloth, 2s.
Percy Blake, 3 vols., post 8vo, cloth, £1 11s. 6d.
Peter Schlemihl, post 8vo, cloth, 3s. 6d.
Reynold's (B.) My First Season, post 8vo, cloth, 10s. 6d.
Robertson's (F. W.) Sermons, 2nd series, post 8vo, cloth, 9s.
Salmon's (Rev. G.) Conic Sections, 3rd edition, 8vo, cl., 12s.
Smart's (B. H.) Thought and Language, fcap., cloth, 4s. 6d.
Smith's (E. R.) Araucanians, post 8vo, cloth, 7s. 6d.
Spike's (E.) Law of Master and Servant, 12mo, cl., 3s. 6d.
Voltaire, Histoire de Charles XII., new edit, 12mo, cl., 2s. 6d.
Walk through the Universal Exhibition, 1855, 3s. 6d.
Walshe's (A.) Military Catechism, 2nd ed., 8vo, cloth, 10s.

BRITISH ASSOCIATION.

PROSPEROUS as was the meeting of the British Association last year at Liverpool, the attendance being nearly double that of the preceding year at Hull, it is surpassed on the present occasion at Glasgow. When the Association assembled in this great commercial metropolis of Scotland fifteen years ago, the numbers exceeded those of any previous meeting; and now that it has returned under the presidency of the young and noble Duke of Argyll, a descendant of the illustrious McCallum More, and one of Her Majesty's Ministers, the welcome has been renewed with a vigour and expression of feeling that promises well for the interests of science. The Glasgow citizens have made every possible arrangements for the Association, and the numerous public Halls in various parts of the town, besides those of the University, afford peculiar facilities for the meeting. The arrangements of the local Committee are especially complete, and even include a system of telegraphic communication between the Reception Room and the different telegraph offices. There is, however, one drawback, causing, perhaps, greater disappointment to the good people of Glasgow than to the assembled *savans*—the weather is miserably wet, the inconvenience being chiefly to ladies passing from one Section Room to another. The following is a comparison of the first day's announcement of numbers in Liverpool and Glasgow :—

Numbers—Wednesday, 8 o'clock p.m.

	Liverpool.		Glasgow.	
Old Life	218	£—	144	£—
New Life.....	12	... 120	18	... 180
Old Annual...	80	... 82	118	... 119
New Annual.	79	... 158	88	... 176
Associates	521	... 521	914	... 914
Ladies	362	... 362	454	... 454
Foreigners ...	6	... —	13	... —
	1278	£1243	1749	£1843

General Committee.

At the opening meeting of the General Committee on Wednesday, the Earl of Harrowby in the Chair, Colonel Sabine commenced the business of the Association by reading the minutes of the General Committee at Liverpool and the Report of the Council, the particulars of which have been already made known to our readers, the Report of the Parliamentary Committee published in our impression of last Saturday, and the Report of the Committee of the Kew Observatory. Great service has been done at this establishment in the verification of thermometers, barometers, and hygrometers, for the Board of Trade, for the Admiralty, and for the United States Navy, and also in preparing a collection of magnetical and meteorological instruments for the Paris Exhibition. We regret, however, to notice that Her Majesty Government, in refusing an application made to them by the

Kew Committee for the use, rent free, of two acres of land adjacent to the observatory, and for the laying on of gas, have not responded to this service in very encouraging terms, and we shall next week submit the case to our readers in detail.

The following is a statement of receipts and payments:—

Accounts of the Kew Committee from Sept. 18, 1854, to Sept. 12, 1855.

RECEIPTS.	£	s.	d.
Balance from last Account	24	13	1½
Received from the General Treasurer.	500	0	0
,, from the Government Grant, for thermometer cases supplied	1	16	0
,, for the verification of Instruments—			
from H.M. Government £7 10			
from East India Comp. 15 14			
from United States Govt. 75 0			
from Opticians 2 16			
	101	0	0
	£627	9	1½

PAYMENTS.		£	s.	d.
Salaries, &c.—				
To Mr. Welsh, one year	£150 0 0			
Ditto, travelling expenses	10 0 0			
Ditto, for expenses in the trials of marine barometers	11 0 0			
Dr. Halleur, from Mar. 29 to Sept. 13	36 0 0			
Ditto, gratuity	10 0 0			
R. Beckley, from Sept. 18, 1854, till Sept. 10, 1855, less nine weeks paid from the Government grant	73 10 0			
J. V. Magrath, one year	40 0 0			
		330	10	0
Apparatus, materials, tools, &c.		43	16	6
House expenses		43	7	2½
Ironmonger and carpenter		37	12	2
Building of magnetic house		49	0	0
Stationery, &c.		21	14	9
Petty expenses		5	6	11
Balance on hand		96	1	7
		£627	9	1½

The proposals for ensuing meetings of the Association were then read. The most urgent invitations were from Cheltenham for 1856, and Dublin for 1857, and it is most probable that these will be accepted. The report of arrangements for the present meeting followed, and the lists of officers and committees of sections, so far as they could be ascertained; but as these were necessarily imperfect, we defer the publication of names till next week. The meeting of the General Committee concluded with the report of the Treasurer:—

The General Treasurer's Account, from 18th Sept., 1854 (Liverpool Meeting), to Sept. 12th, 1855, at Glasgow.

RECEIPTS.	£	s.	d.
To Balance brought from last year's account	96	15	6
Life compositions at Liverpool, and since	260	0	0
Subscriptions of annual members at Liverpool, and since	414	0	0
Associates' tickets at Liverpool	765	0	0
Ladies' tickets at Liverpool	524	0	0
Composition for future reports	5	0	0
From Sale of Publications.			
Reports of meetings ...106 15 4			
Catalogues of stars, and Dove's distribution of heat over the globe... 65 16 0			
	172	11	4
Twelve months' dividend on £3500 3 per cent. consols	98	8	9
Liverpool Bank, for interest on balance of account	29	15	2
	£2365	10	9

PAYMENTS.	£	s.	d.
By paid expenses of Liverpool meeting, sundry printing, binding, advertising, and independent payments by general treasurer and local treasurers	332	5	6
Printing report of 23rd meeting, engraving, &c.	385	7	3
Salaries—12 months	350	0	0
Maintaining the establishment of Kew observatory	425	0	0
On account of grants; namely—			
Earthquake movements	10	0	0
Physical aspect of the moon	11	8	5
Vitality of seeds	10	7	11
Map of the world	15	0	0
Ethnological queries	5	0	0
Dredging near Belfast	4	0	0
Balance at the bankers £812 7 11			
,, in general treasurer's hands 6 1 7			
	818	9	6
Due to local treasurers	1	7	10
	817	1	8
	£2365	10	9

No increase, it will be seen by the foregoing statement, has been made in the allowance for grants. The profits arising out of the success of the Liverpool meeting have been reserved "at the bankers," and, with the still larger profits of the present meeting, will probably be added to the small funded capital of the Association.

Evening General Meeting.

The first General Meeting in the City Hall was a brilliant assemblage, the room being densely filled, the leading men of science, who had been entertained at dinner by the Lord Provost, surrounded the noble President on the platform. The Address, which occupied about an hour and a quarter, was delivered with much animation, and listened to with marked attention. The Duke of Argyll gracefully apologised for the Address being more general in its topics than the annual report of the progress of science, by the distinguished men who usually occupy the chair; but he knew he held the honourable post chiefly from his local connexion with the place of meeting, and he thought an address of a different caste might on the present occasion be of service in increasing the popular interest in the objects and the proceedings of the Association.

The President's Address.

"Gentlemen of the British Association,—I know, gentlemen, that the duty of presiding over this meeting of the British Association for the Advancement of Science, has been assigned to me mainly in consequence of my local connexion with the district and city in which we are now assembled. It cannot therefore be departing from the special duty of that position, if I address you, in the first place, as one of those who are receiving the honour of your visit. I am sure I cannot express in terms too warm the feelings of this great community. It would be strange indeed if Glasgow did not hold out to you a cordial reception. Here, if anywhere, we have reason to honour science, and to welcome the men whose lives are devoted to its pursuit. The west of Scotland has itself contributed not a few illustrious names to the number of those who have enlarged the boundaries of knowledge, or have given fruitful application to principles already known. I need not dwell on the fact, that it was in this valley of the Clyde that the patient genius of Watt perfected the mechanism which first gave complete control over the powers of steam; and that it was on these waters, too, that those powers were first applied in a manner which has given new wings to commerce, and is now affecting not less decisively the terrible operations of war. These are but single examples, more striking and palpable than others, of the dependence of the arts upon the advance of science. This, however, is a dependence which, I am sure, the citizens of Glasgow would be the first to acknowledge, and which, no doubt, with them as with all men, must be an important element in the value which they set upon physical research. But I am sure I should deeply wrong the intelligence of the people of Glasgow, if I were to represent them as measuring the value of science by no other standard than its immediate applicability to commercial purposes. They seek to honour science for its own sake, and to encourage the desire of knowledge as in itself one of the noblest instincts of our nature.

"It is my duty also, gentlemen, to speak on behalf of a special body—one of which Glasgow has so much reason to be proud—I mean its ancient and venerable University. If the mechanical arts owe to this district of Scotland the greatest impulse they have ever yet received, it is not less true that our knowledge of the laws which regulate the pursuits of industry, and determine the distribution of the 'wealth of nations,' has been almost founded on the researches of one whose name is indissolubly associated with this seat of learning. Here, again, we have an illustrious example of the mutual relations between science and politics in its best and highest definition. But, indeed, our convictions are independent of such examples. It is impossible to appreciate too highly the influence which science is evidently destined to have on the prospects of education; and we look for the time when its methods, as well as its results, will form the subject of teaching, not only as partially it has long done in our colleges, but also in the humblest of our schools. I feel it to be no small privilege, arising out of the academical office, which this year I have the honour of holding, to be able to assure you, on behalf of the University of Glasgow, of the deep interest with which we regard your visit, and of our high appreciation of the ends which it is your object to promote.

"It is now fifteen years since the last meeting of the British Association here. There are probably few, even annual, meetings of any considerable body of men, which are not marked by some melancholy recollections. Still more must this be the case after the lapse of so long an interval—one which measures, as is usually reckoned, full half a generation in the life of man. Among the many vacancies in your ranks which that period has occasioned, there are some which, from local associations or from other causes, are naturally impressed more deeply on the mind than others. I am sure that one venerable name will rise to the memory of all who took any interest in the proceedings of 1840—of one whose early tastes for natural science had only yielded before his devotion to a yet higher service; but whose powerful mind still sought to found all his efforts, in the cause of religion and humanity, on obedience to the eternal laws, which are as sure and steady in their operation over the minds of men, and over the progress of society, as are other laws over the subjects of material change. Who can forget the zeal and more than youthful eagerness with which Dr. Chalmers entered into the discussions of the Statistical Section; and how he saw in those discussions the means of spreading the knowledge of principles which are of vital interest to the welfare of the State?

"But that name, though the lapse of years has not carried it beyond the region of regret, is one with which we have at least become familiar as belonging to the number of the departed great. Such is not the case with other vacancies, and especially with one which is still affecting us with almost bewildered sorrow, and an abiding sense of irreparable loss. Who shall take up the torch which has fallen from the hand of Edward Forbes? Who shall hold it as he held it, to those dark places in the history of life which science is striving, perhaps in vain, to penetrate, but which seemed already opening their treasures to his fine and advancing genius?

"But whilst sad recollections are thus forced upon us as regards the life of individual men, we have every reason to be satisfied with the inheritance they have left. Many labourers are gone,

but the cause in which they laboured has been steadily gaining ground. Long as fifteen years may be as a period in human life, it is generally but a fraction in the history of mental progress. Yet since the last meeting of the British Association here, I am greatly mistaken if we cannot mark great strides in the advance of science. I wish, gentlemen, you had a President more competent than I am to chronicle that advance, and direct the retrospect to a practical and useful end. There are, however, some features so remarkable that I cannot omit referring to them, as well calculated to raise our hopes and stimulate our exertions. In that science which is the oldest and most venerable of all, I mean astronomy, if there had been nothing else to mark the progress of discovery, the construction and application of Lord Rosse's great reflector would have been enough to constitute an important epoch. Its systematic operations may be said to be still only in the first stages of their progress; yet already how often do we see reference had to the mysterious revelations it has made in discussions on the principles of that science, and in not a few of the speculations to which they are giving birth! My distinguished friend Sir D. Brewster, in his recent 'Life of Newton,' has designated that telescope as 'one of the most wonderful combinations of art and science which the world has yet seen.' All who are interested in the devotion of abilities, of means, and of leisure, to the noblest pursuits, must earnestly wish to see Lord Rosse rewarded by that which he will value most, the steady progress of discovery. It must always be remembered, however, that astronomy is a science of which hitherto at least it might almost be said that one great genius had left us no more worlds to conquer; that is to say, he carried our knowledge at a bound to one grand, and apparently universal law, to which all worlds were subject, and of which every new discovery had been but an additional illustration. The reign of that law, whether universal or not, was at least so wide, that we had never pierced beyond the boundary of its vast domain. For the first time since the days of Newton a suspicion has arisen in the minds of astronomers that we have passed into the reign of other laws, and that the nebular phenomena revealed to us by Lord Rosse's telescope must be governed by forces different from those of which we have any knowledge. Whether this opinion be or be not well founded—whether it be or be not probable that our limited command over time and space can ever yield to our research any other law of interest or importance comparable with that which has already been determined—still, inside that vast horizon there are fillings-in and fillings-up which will ever furnish infinite reward to labour. Of these not a few have been secured since our last meeting here. Besides the patient work of our professed astronomers, and the good service rendered by such men as Mr. Lassell and Mr. Nasmyth, who have so well relieved the business of commercial industry by their devotion to the pursuits of science, we have had one event so remarkable that in the whole history of astronomy it stands alone. If in looking at the wonderful objects revealed to us in Lord Rosse's telescope, we turn instinctively sometimes from the thing shown to the thing which shows—from the spiral nebulæ to the knowledge and resources which have collected their feeble light, and brought their mysterious forms under the cognizance of the human eye, how much more curiously do we turn from the single planet Neptune to that other instrument which has *felt*, as it were, and found its obscure and distant orbit! So long as our species remains, that body will be associated with one of the most glorious proofs ever given of the reach of the human intellect;—of the sweep and certainty of that noble science which now honours with enduring memory the twin names of Adams and Leverrier.

"In geology, the youngest, but not the least vigorous of the sciences, every year has been adding to the breadth of its foundation—to the depth and meaning of its results. Probably no science has ever advanced with more rapid steps. In 1840 the then recent publication of the 'Silurian System' had just established those landmarks of the Palæozoic world which all subsequent discovery has only tended to confirm. The great horizons which were first defined by the labours of Murchison and Sedgwick have since disclosed the same phenomena which they so accurately described, in every quarter of the globe; and the generalizations founded thereupon have been definitely established. The same period has sufficed, partly by the labours of the same distinguished men, to clear up the relative position of the strata which represent the closing epochs of ancient life, and those which form the base of the secondary age. But above all, the last few years have seen immense progress made in our knowledge of that vast series of deposits which usher in the dawn of existing forms, and carry us on to those changes, which, though the most recent, are not the least obscure of any which have affected the surface of the globe. The investigations of Edward Forbes on the laws which determine the conditions of marine zoology, have supplied us with data altogether new on some of the highest conclusions of the science; whilst his profound speculations on the centres of creation and areas of distribution have pointed out paths of inquiry which are themselves of inexhaustible interest, and hold out the promise of great results. Another branch of investigation, which, if not entirely new, is at least pursued on a new system, and with new resources, has been opened up in dynamical geology by the learning and ingenuity of Mr. Hopkins; whilst the thorough elucidation of the conditions of glacier motion, which we owe to Professor James Forbes of Edinburgh, has given us clear and definite ideas on one, and that not the least important of the agents in geological change. The observations accumulated during the recent arctic voyages have materially added to our knowledge of the operation of the same agency under different conditions—conditions which we know must once have extended widely over the firths and estuaries near where we are now assembled—leaving behind them those enduring records of the glacial epoch which were first explored by my friend Mr. Smith of Jordanhill. We owe many important observations on the same phenomena, and on the various changes of sea-level, to Mr. Robert Chambers. And if the thanks of Science are due to those who advance her interests, both directly by adding to her store of facts, or of her discovered laws; and also indirectly by investing them with popular interest, and thus enlarging the circle of observers, we must mention with special gratitude the classical works of Mr. Hugh Miller; and those writings of Sir Charles Lyell, which his indefatigable industry is ever bringing up abreast with the progress of discovery—a progress stimulated in no small degree by his own exertions—and which are alike remarkable for completeness of knowledge, for fertility of suggestion, and for sound philosophical reasoning. I think we cannot mistake the general tendency of geological research, whether statigraphical or zoological. It has been to prolong periods which had been considered short; to divide others which were classed together; to fill up spaces which were imagined blank, and to connect more and more in one unbroken chain the course of physical change and the progress of organic life.

"We pass from geology by a natural transition to another science which stands to it in close alliance. If all our most sure conclusions respecting the superficial covering of the globe have been founded on the classification of its animal remains, it is not less true that our knowledge and understanding of organic structure have been infinitely extended by the means which geology has afforded of studying that structure in relation to its history in past time. In the hands of our great countryman, Professor Owen, physiology has assumed a new rank in science, leading us up to the very threshold of the deepest mysteries of nature. If the last few years have been marked by no other event in the advancement of science, there would have been enough to signalise them in the publication of his treatise on the 'Homologies of the Vertebrate Skeleton:' and we may recollect with pride the fact of that high argument having been first opened at a meeting of the British Association.

"A sad interest, indeed, attaches, in one direction at least, to the progress of our knowledge in geography. All serious doubt seems to have closed now over the grave of Franklin. Even in a year during which war has been claiming the noblest victims by thousands and tens of thousands, it would ill become this Association not to mark with an expression of our sorrow and admiration the self-sacrifice of that gallant band which has perished in the cause of science. But their devotion has been emulated, under a still higher stimulus, in the more successful career of others: and at last in the discovery of the North-West Passage (still so-called in spite of its having been found impassable), the courage and endurance of Captain McClure and his associates have ascertained with certainty a most remarkable fact in the physical conformation of the globe. Results of still larger, and certainly of more immediate interest are being arrived at by the rapid march of African exploration,—not, surely, before the time. Every part of the circumference of that vast continent has been either known or accessible to us for centuries. On its soil have flourished some of the most ancient and famous monarchies; and one of its great valleys is the fatherland of science. Yet up to comparatively recent times our horizon there has been bounded by the same sands or mountains which bounded the knowledge of antiquity, and we had almost as little acquaintance with its interior as had the Tyrian merchant when his eye rested of old on the Peaks of Atlas. Nothing but familiarity with the fact could have reconciled us to the ignorance in which we have so long remained of one of the largest and most interesting regions of the world. That ignorance is at last being cleared away; and the exertions of many individuals, amongst whom the names of Mr. Galton, of Mr. Anderson, Dr. Livingston, Dr. Baikie, and Dr. Barth, stand conspicuous, have contributed results of the deepest interest and importance. No man who values science can fail to appreciate the extension of our knowledge respecting geography even where, as in the Arctic regions, that knowledge is pursued simply for its own sake. But it becomes invested with tenfold interest when it brings with it the largest influence on the destinies of millions of the human race; and adds, as we may confidently hope it will ultimately do in the case of Africa, an inexhaustible field for manufacturing and commercial enterprise.

"In connexion with the diffusion of geographical knowledge I cannot omit to mention the magnificent publications of Mr. Alexander Keith Johnston of Edinburgh, in his 'Atlas of Physical Geography.' It is seldom that such a mass of information has been presented in a form so beautiful and attractive; or one which tends so much to place the study of geography on a truly scientific basis—that is to say, on the basis of its relation to the other natural sciences, and those grand cosmical views of terrestrial phenomena which have found their most distinguished interpreter in Baron Humboldt.

"The kindred science of ethnology has received of late years great development; not only by its increasing store of facts, but by the more scientific use which is being made of facts which have been long familiar. The investigation of the laws which regulate the growth of language promises to cast the most important lights on the history of our race; but the conclusions to which that investigation may lead are still matters of keen and anxious controversy, and are exposed to all that suspicion which has been directed against almost every science at some stage or other of its growth; and which, we must allow, every science has, at some stage or other, justified by hasty generalization and premature deduction.

"Of all the sciences chemistry is that which least requires to have its triumphs recorded here. The immediate applicability of so many of its results to the useful arts has secured for it the watchful interest of the world; and every day is adding some new proof of its inexhaustible fertility. There is one department of inquiry, and that perhaps the most interesting of all, I mean organic

chemistry, which has received an especial impulse during the last few years, an impulse mainly due to the genius of one distinguished man whom we have the honour of numbering among our guests upon this occasion. I think Baron Liebig will find in Scotland that kind of welcome which a man of science values most—a readiness to profit by his instructions, and an enlightened appreciation among the farmers of the country of the practical value of studying in their husbandry the laws which have been revealed by his research. I am reminded, through the kindness of Dr. Lyon Playfair, of some facts which give yet a more special interest to this subject in connexion with our meeting here. It was to the British Association at Glasgow in 1840, that Baron Liebig first communicated his work on the 'Application of Chemistry to Vegetable Physiology.' The philosophical explanation there given of the principles of manuring and cropping gave an immediate impulse to agriculture, and directed attention to the manures which are valuable for their ammonia and mineral ingredients; and especialy to guano, of which in 1840 only a few specimens had appeared in this country. The consequence was that in the next year, 1841, no less than 2881 tons were imported; and during the succeeding years the total quantity imported into this country has exceeded the enormous amount of 1,500,000 tons. Nor has this been all: Chemistry has come in with her aid to do the work of nature, and as the supply of guano becomes exhausted, limited as its production must be to a few rainless regions of the world, the importance of artificial mineral manures will increase. Already considerable capital is invested in the manufacture of superphosphates of lime, formed by the solution of bones in sulphuric acid, the use of which was first recommended at the last Glasgow Meeting. Of these artificial manures not less than 60,000 tons are annually sold in England alone: and it is a curious example of the endless interchange of services between the various sciences that geology has contributed her quota to the same important end; and the exuvise and bones of extinct animals, found in a fossil state, are now, to the extent of from 12,000 to 15,000 tons, used to supply annually the same fertilizing materials to the soil. The exertions of Professor Daubeny of Oxford on the same important subject, and the continued attention which he has devoted to it, have done much for the cause of agricultural chemistry in England; whilst the thanks both of practical and of scientific men are due to Dr. Lyon Playfair, and Professor Gregory of Edinburgh, for those admirable translations of Baron Liebig's works, which have rendered them accessible to every English reader; and have thereby had no unimportant influence in extending the knowledge of the laws affecting both vegetable and animal physiology.

"I am indebted to the same quarter for the mention of one remarkable instance of the manner in which—to use Dr. Playfair's words—'the overflowings of abstract science pass into and fertilize the field of industry.' One of the newest and most obscure subjects of chemical research has been the discovery of certain conditions under which bodies, like in their composition, are nevertheless endowed with unlike properties, and thereby become convertible to new purposes. It is in the application of this principle that a gentleman of this city, Mr. James Young, has succeeded in obtaining the illuminating principle of coal gas either in a solid or liquid state; and it has proved to be a substance of immense value for the lubrication of machinery, vast quantities of it being now manufactured and sold for that purpose.

"I hardly know whether it is strictly in connexion with the advance of chemical knowledge that I ought to remind you of one great discovery made long since we last assembled here;—I refer to the discovery of the effects of chloroform on the animal system; one which claims for my friend Dr. Simpson of Edinburgh a high place indeed among the benefactors of mankind. Chloroform as a mere chemical composition had indeed been known before, and had been made the subject of elaborate research by the distinguished French chemist, M. Dumas, whom we have here the honour of receiving as a guest. But the discovery of its application is not the less a triumph of science, and of the best and highest scientific faculties. Seldom indeed has that disposition of mind which is ever ready to receive a chance suggestion, and to pursue it, believing what great things we have yet to learn, been crowned with a more brilliant and direct reward.

"It marks the growing sense entertained of the value of statistical research, that, during the late session of Parliament, a committee of the House of Lords sat for a considerable time on the best means of securing a complete system of agricultural returns. We owe much in this matter to the exertions of the Highland Society of Scotland, and, as has been specially recorded by the committee, to the zeal and activity of their able secretary, Mr. Hall Maxwell. We owe not less, also, to the high intelligence of the farmers of Scotland generally, who have rendered every assistance in their power, and that with a willingness which can only arise from an enlightened appreciation of the great objects to be gained by the inquiry.

"No one has rendered more important service to Statistical science, in one of its most interesting departments, than the able chamberlain of this city, Dr. Strang. His periodical reports on the growth and progress of Glasgow are among the most curious and useful records of the kind which have been published in any part of the United Kingdom. I need hardly say that they supply materials for much reflection on many questions connected with the social welfare of the people. I believe Dr. Strang has lately visited Paris, with a view to communicate to this meeting of the Association various facts connected with the great improvements which are in the course of progress in that city. Should his investigations cast any light on the best means of improving the dwellings of the labouring classes in the great centres of population, and on the possibility of doing so on a large scale, by public authority, he will have rendered no small service to his country in a matter of vital interest and of much difficulty.

"Closely connected with the subject of statistics, as applied to agricultural returns, I am happy to say that, mainly owing to the exertions of Sir J. Forbes of Fettercairn, and of Mr. Milne Home, a Meteorological Society for Scotland has been established, warmly seconded by the Highland Society. The wonderful results on a great scale which have been obtained in this department of science by Lieut. Maury of the United States, give us ground to hope that even on the small areas of individual countries, where of course, from the crossing of local influences, the general result is infinitely complicated, some approach may be made towards ascertaining the laws which regulate the seasons.

"The admirable agency which is now afforded by the Kew Committee of this Association, for the verification of instruments, and by the new meteorological department of the Board of Trade under Capt. Fitzroy, for the reduction of local observations, will, I trust, be taken advantage of by the new Scottish Society. I cannot help congratulating the Association on the position which has been secured by science in connexion with both of these establishments. The thanks of the commercial as well as of the scientific world are due to Colonel Sabine and the other members of the Kew Committee, whose assistance is now highly appreciated by practical men, and eagerly sought for by the best instrument-makers; whilst Capt. Fitzroy's office and duties are in themselves an acknowledgment of no small importance of the public value of systematic observation.

"The increasing employment of iron in shipbuilding has brought into corresponding notice the uncertainty which attends the action of the compass on board vessels of that construction. This important and intricate subject has been treated of by Mr. Archibald Smith of Jordan Hill, with all the resources of his high mathematical and scientific attainments, in publications which have appeared under the sanction and with the recommendation of the Admiralty. It will not fail to interest this great commercial city, whose freights are on every sea, that this question was taken up at the last Liverpool Meeting by Dr. Scoresby, that it has continued to occupy his close attention, and that he intends to communicate to this Meeting of the Association some of the valuable results of his investigations.

"Feeling deeply, as I do, my own inability to give anything like an adequate sketch—even in outline—of the progress of science during the last few years, I remember at the same time with some satisfaction, that it is less the business of this Association to boast of the achievements which have already been effected, than to devise means of facilitating those which are yet to come. You have appointed a Parliamentary Committee for the consideration of one important branch of this inquiry. We shall doubtless hear from my noble friend Lord Wrottesley those recommendations which have been the result of its recent labours, and which will be found to owe much to his enlightened zeal, to his great knowledge and his sound judgment. In the meantime, I trust I may be allowed to make a few general observations on what appear to me to be some of the best means of promoting in this country the advancement of physical science.

"It will readily be understood, that, in referring for a moment here to the aid which may be afforded by the State to the advancement of science, I divest myself entirely of any official character other than that which belongs to me as your President, and that I seek to give expression to my own opinions only.

"I am not one of those who are disposed to look to public authority as the primary or the best supporter of abstract science. In the main it must depend for its advancement on its own inexhaustible attractions—on the delight which it affords us to study the constitution of the world around us, and to endeavour to understand, though it be but darkly, how the reins of its government are held. Nor am I disposed to indulge in any complaint on a matter which has lately attracted some attention among scientific men. In a great manufacturing country like ours, the disposition of whose people is eminently practical, it is perfectly natural that greater attention should be bestowed on the arts than on the abstract sciences. This, indeed, is but adhering to what has been hitherto at least the natural and historical order of precedence; for it is a just observation of Professor Whewell, in his lecture on the results of the Great Exhibition of 1851, that practice has generally gone before theory—results have been arrived at, before the laws on which they depend had been defined or understood. Art, in short, has preceded science. But it is equally important to observe, that in recent times this order has been in numberless instances reversed. Abstract science has gone ahead of the arts, and the conduct of the workshop is now perpetually receiving its direction from the experiments of the laboratory. Perhaps the most wonderful discovery of modern days—that of the Electric Telegraph—was thought out and perfected, so far as its principle was concerned, in the closet and the lecture-room, and flashed ready-made on the astonishment of the world. In chemistry, the lead taken by abstract science in reacting on the arts is manifest and constant; and in a greater or less degree the same result is appearing in connexion with every branch of physical research. The interest, therefore, of the State, even if it be considered merely in this economic point of view, in the encouragement of abstract science, is obvious and immediate. And there is this additional motive to be remembered: the moment any result of science becomes applicable to the arts, the unfailing enterprise of the commercial and manufacturing classes takes it up and exhausts every resource of capital and of skill in giving to that application the largest possible development. But so long as science is still purely abstract, it has often to be prosecuted with slender resources, and specially requires fostering care and a helping hand. But I rejoice to believe that the conviction of this truth is sensibly

gaining ground. The foundation of the geological museums both in England and Scotland, and the carrying out of a complete geological, concurrently with a geographical survey, by public authority and at the public expense, were great steps in the right direction. Another such step was the investment of 1000*l.* annually in aiding experimental research, through the agency of the Royal Society, which undertook the trouble of its special allocation. It is the intention of my noble friend, Lord Palmerston, to bring the principle of some expenditure in this direction specially under the notice of Parliament for the future; and it is worthy of remark, as illustrating how far a small sum may go in aid of abstract science, and how cheaply the largest and most fruitful results may thereby be attained, that, as I have been informed on very high authority, this apparently trivial sum has been felt as a most important help in numberless instances, sometimes in the conduct of experiments, sometimes in the publication of their results, and sometimes in securing accurate artistic delineations.

"The relations now established between the Board of Trade and various branches of scientific investigation are such as lay the foundation for further progress in the same direction. I am happy to say that, in connexion with the new national museum which is being organized for Scotland, there is to be a special branch devoted to the industrial applications of science; and that a new professorship—one which has long existed in almost all the continental universities, that of Technology—has just been instituted by the Government. I am not less happy in being able to announce, that to that chair Dr. George Wilson has been appointed. The writings which we owe to the pen of Dr. Wilson, and especially his beautiful Memoirs of Cavendish, and of Dr. Reid, are among the happiest productions of the literature of science.

"I trust also that the aid of the State may be secured in providing a house and home for the scientific bodies in the metropolis. I am disposed to agree with those who attach no small importance to this consummation. When the Royal Society alone adequately represented all or nearly all who were engaged in physical science, that great body fulfilled all the necessary conditions of a scientific council. But now, when almost every separate division of science has a separate society of its own, it has become almost indispensable that some new arrangement should be come to, in order that abstract science may have that degree of organization without which its interests will never receive the public attention which they ought to have.

"The influence, if not the authority of the State, may also, I think, be most beneficially exerted on behalf of science, through the educational rules and principles of administration of the Privy Council. But the Committee of Council, in the adoption of those rules, is necessarily governed to a certain extent by the feelings and opinions of the various churches and bodies which are the primary supporters of our existing educational system. In the last report of the Council of the Geographical Society, they announce a communication from the Committee of Privy Council, requesting the Society to appoint an examiner in geography, to be associated with other examiners on other branches of education. It may be well worthy of consideration, whether the same expedient might not be usefully adopted in reference to other branches of science which have hitherto formed a less admitted part of ordinary instruction.

"And this, gentlemen, brings me to say, that the advancement of science depends, above all things, on securing for it a better and more acknowledged place in the education of the young. There are many signs that the time is coming when our wishes in this respect will be fulfilled. They would be fulfilled, perhaps, still more rapidly, but for the operation of obstructing causes, some of which we should do well to notice. How often do we find it assumed, that those who urge the claims of science are desirous of depreciating some one or more of the older and more sacred branches of education! In respect to elementary schools we are generally opposed, as aiming at the displacement of religious teaching; whilst in respect to the higher schools and colleges, the cudgels are taken up in behalf of classical attainments. A remarkable example of the influence of these feelings will be found in a speech delivered by Lord Lyndhurst during the late session of Parliament. With all the power of his dignified and commanding eloquence, he asserted the right of the elder studies to their time-honoured pre-eminence; and in the keen pursuit of this argument, even he was almost tempted to speak in a tone of some depreciation of those noble pursuits in which the University of which he is a distinguished ornament has won no small portion of her fame. But surely no enlightened friend of the natural sciences would seek to challenge this imaginary competition. Perhaps, indeed, like other zealous advocates, we may have sometimes overstrained our language, and have thereby given such vantage-ground to prejudice, that it has been enabled to assume the form of just objection. We cannot too earnestly disclaim the idea that the knowledge of physical laws can ever of itself form the groundwork of any active influence in morals or religion. Any such idea would only betray our ignorance of some of the deepest principles of our nature. But this does not affect the estimate which we may justly put on an early training in the principles of physical research. That estimate may be not the less a high one, because it does not assign to science what belongs to other things.

"There is one aspect in which we do not require to plead the cause of science as an element in education, and on that, therefore, I shall not dwell. I mean that in which certain applied sciences are recognised as the essential bases of professional training: as, for example, when the engineer is trained in the principles of mechanics and hydrostatics, or the physician in those of chemistry. Of course, with every new application of the sciences to the arts of life, this direct influence will extend. But what we desire, and ought to aim at, is something more. It is, that abstract science, without special reference to its departmental application, should be more recognised as an essential element in every liberal education. We desire this on two grounds mainly; first, that it will contribute more than anything else to the further advancement of science itself; and, secondly, because we believe that it would be an instrument of vital benefit in the culture and strengthening of the mental powers.

"But, as regards both these great objects, we must remember that much will depend on the manner in which elementary instruction in science is conducted; on the conception, in fact, which we entertain of what science really is. Nothing can be easier than so to teach science as to feed every mental vice or weakness which obstructs the progress of knowledge, or blinds men to every evidence of new truths, in self-satisfied contemplation of the few they have already ascertained. May we not illustrate this by the effect which has not seldom been produced by the scientific education of professions? It is true, indeed, that professional men have often enlarged the field of science by the discovery of new and important truths. Some of the strongest-armed pioneers of science have been of this class. But how have their discoveries been too often received by their professional brethren? How many of them have been assailed by every weapon in the extensive armoury of prejudice and bigotry! How many of them have had their name recognised only after it had been written on the grave! and over whom we might well repeat the noble lines—

> . . . . . 'Now thy brows are cold
> We see thee, what thou art, and know
> Thy likeness to the wise below,
> Thy kindred with the great of old.'

What we want in the teaching of the young, is, not so much the mere results, as the methods, and, above all, the history of science. How, and by what steps it has advanced; with what large admixture of error every new truth has been at first surrounded; by what patient watchings and careful reasonings; by what chance suggestions and happy thoughts; by what docility of mind, and faith in the fulness of nature's meanings; in short, by what kinds of power and virtue, the great men, aye, and the lesser men of science have each contributed their quota to her progress; this is what we ought to teach, if we desire to see education well conducted to the great ends in view. It is not merely for the sake of investing the abstractions of science with something of a living and human interest, that we should recal and revive these passages in her history: nor is it merely to impress her results better on the memory, as we fill up from biographies and other sources of information the meagre page of the general historian. It is for something more than this. It is both that they may be more encouraged to observe nature, and that they may better understand how to do so with effect. It is that they may cultivate that temper of mind to which she most loves to reveal her secrets. And as regards those whose own opportunities of observation may be small, it is that they may better appreciate the labours of others; and may be enabled to recognise, in the midst, perhaps, of much extravagance, the tokens of real genius, and in the midst of much error the golden sands of truth.

"It is one of the many observations of Sir C. Lyell which have a much wider application than that to which they were specially directed, that the mistake of looking too exclusively to the grand results of geological change, and of referring them too readily to sudden agencies of tremendous activity and power, tended to check the advance of that science, by discouraging habits of watchfulness over those operations which are contemporary with ourselves, and the secret of whose power is to be found in the lapse of time. An effect precisely analogous is produced on the progress of science as a whole by a similar method of regarding it. And even when the history of that progress is attended to at all, there is a natural disposition to look back to a few great names among the number of its chief promoters, as beings who, by dint only of some unapproachable superiority of intellect, have taught us all we know. It is true, indeed, there have been a few such men; just as there have been periods of sudden geological operations, which have upheaved at once stupendous and enduring monuments. But even in respect to those great men, it will often be found that at least one great secret of their power has lain in virtues which might be more common than unfortunately they are found to be. That openness and simplicity of mind which is ever ready to entertain a new idea, and not the less willing that it may be suggested by some common and familiar thing, is one of the surest accompaniments of genius. But it is clearly separable from extraordinary intellectual power, although, where both are found together, the great results produced are too often attributed to the more brilliant faculty alone. Professor Whewell, in his most interesting 'History of the Inductive Sciences,' whilst deprecating the degree of attention which has been paid to the well-known story respecting the origin of Newton's thoughts on gravitation, has nevertheless stated, with his usual clearness and precision, the essential truth which the traditions of science have done well to cherish. Those who have been competent to judge of the calibre of Newton's mind, of its powers of pure abstract reasoning, have with one voice assigned it the highest place in the records of human intellect. Doubtless, it was those powers which enabled him to prove what otherwise would have remained conjecture. But it is not the less important to observe, that the suggestion on which these powers were called to work was one eminently characteristic of a mind where simplicity and greatness were indeed synonymous. That the celestial motions, about which so many wonderful facts were then already known, and which had been referred to so many mysterious and imaginary forces, should be indeed identical in kind with the motions which took place close beside him, and that the same rules should be applicable to each, this was an idea in which, to use Dr. Whewell's words, 'Newton had no forerunner.' We do not need to compare the relative import-

ance of those qualities of mind which are indicated in the first conception of such an idea, and of those other faculties which could alone crown it with demonstration, and add it to the number of established truths. For the attainment, by a single individual, of results so grand and so complete as those which were reached by Newton, each was necessary to the other. But characteristics, which were in him united, have not the less had their separate value when divided in other men; and it cannot be too often repeated, that habits of wakeful observation on the commonest phenomena of nature are often alone enough to yield a rich harvest to the man of science, and to crown his labours with an immortal name. This has been a result of continual recurrence in the progress of knowledge. It is the expression and evidence of a truth of equal importance in the moral and the physical world, that the common things which surround us in our daily life, and many of which we do not really see, only because we see them too often and too familiarly, are governed by principles of infinite interest and value, and whose range of application is wide as the universe of God.

"And this brings me to say a word on the value of instruction in physical science, not merely with a view to its own advancement, but as in itself a means of mental training and an instrument for the highest purposes of education. It is in this latter point of view that its claims seem to be least admitted or understood. We may bear an exception made in favour of the exact sciences, which involve the application of mathematical knowledge, since this has been long recognised as requiring the highest intellectual exertion; but with regard to other sciences, how often do we hear them condemned as affording 'mere information,' and as tending in no sensible degree to strengthen and invigorate the mental powers! But, again I say, this would entirely depend on how science is to be taught—whether by a mere cramming of facts from manuals, or by explaining how and by whom former problems have been solved,—what and how vast are other problems yet waiting for, and capable of solution. And even where the researches of physical science can do little more than guide conjecture, or illustrate merely what it cannot prove, how grand are the questions which it excites us to ask, and on which it enables us to gather some amount of evidence! In geology, is it true, or is it not true, that 'we can see no trace of a beginning—no symptom of an end?' To what extent, and in what sense are we yet entitled to say, that there has been an advance in organization as there has been advance in time? In physiology, what is the meaning of that great law of adherence to type and pattern, standing behind as it were, and in reserve of that other law by which organic structures are specially adapted to special modes of life? What is the relation between these two laws; and can any light be cast upon it, derived from the history of extinct forms, or from the conditions to which we find that existing forms are subject? In vegetable physiology do the same, or similar laws prevail,—or can we trace others, such as those on the relations between structure, form, and colour, of which clear indications have already been established, in communications lately made to this Association by Dr. M'Cosh and Dr. Dickie of Belfast? In chemistry, how is it that some of the most powerful actions escape our finest analyses? In medicine, what is the action of specifics? and are there no more discoveries to be made, such as rewarded the observation of Jenner, in the almost total extinction of a fearful and frequent scourge? It is in reference to such great questions, and ten thousand others equally interesting and important, that the pursuits of science call forth the highest activities of the mind, and exercise every power of thought and reasoning with which it has been endowed.

"Indeed it may fairly be questioned whether those sciences which are called exact, are necessarily the best preparation for the actual business of the world. It is the rare exception, and not the rule, when exact and perfect demonstration becomes applicable to the affairs of life. In general, men have to balance between a thousand probabilities, and to take into account a thousand conflicting tendencies. Surely there can be no training better than that which teaches us by what careful inductive reasoning—by what separation between permanent and accidental causes,—by what constant reference from the present to the past, and from the past back again to the present, our existing knowledge has been attained in the paths of physical research. It is true, indeed, that where men's passions and prejudices are much concerned, no amount of teaching will ever induce them to follow or attend to the best methods of arriving at the truth. But even where there are no such disturbing causes, where moderate and candid men are expressing their sincere convictions, how constantly do we hear them ascribing effects to causes, which the slightest habit of correct reasoning would have been sufficient to dismiss! In questions of great social or political, as well as of philosophical importance, the want of such habit is often most painfully apparent, and serves in no small degree to retard the progress of mankind. The necessity of considering all questions with reference to fundamental principles or laws, and these again with reference to the disturbing causes which delay or suspend their operation, the mode of weighing evidence, and the degree of value to be attached to that which is of a merely negative kind—these are things of which we are perpetually reminded in the pursuits of science; and these surely are no useless lessons, whether in religious, social, or political affairs.

"And then there is another consideration of no small importance. As science has now come to a stage in her progress, when she heads the arts, and flings back upon them her reflected light, so also has she now reached a degree of development, which casts some rays forward on questions of higher import than those which she can fully answer. It is in vain that we try to draw definite lines between the physical and the metaphysical,—between the secular and the religious. There is a felt relation between the laws which obtain in each —such, indeed, as we might expect to find in provinces of a universal empire. The consequence is, that in every speculation on those higher questions on which men will and must speculate—in every system of philosophy, whether ancient or modern, they draw not merely their illustrations, but not a few of their conclusions from science, or from that which passes by the name. If, therefore, her discoveries, and above all, her methods and her history be but partially and superficially understood, the popular mind will be a perpetual prey to the most specious forms of error. But that history teaches caution. It is full of warning as well as of example. In being a history of the progress of knowledge, it is a history also of the obstructions which knowledge has encountered, and an index of those to which she is still exposed. The influence of opinions and theories preconceived,—of rash conclusions, and of false analogies, has been, and still is, a perpetual source of danger. So much is this the case, that we soon learn to receive with extreme caution the inferences drawn by men of science from the facts they may bring to light, wherever these inferences touch upon other departments of knowledge. The relation in which a new fact or law stands to others is seldom at once rightly understood. It is only through fightings and controversies of every kind that it gradually finds its place; and becomes, not unfrequently, an instrument in defence of truths which at first it was supposed to sap and undermine. I do not mean to say that the full meaning of the discoveries of science is always brought to light. Far from it. It would be more true to say that their ultimate meaning is never reached; and that for every question which science answers, she propounds another which it is beyond her powers to solve. But in this we may see the strongest of all arguments against our entertaining any fear of science as regards the interests of religion. It is sometimes proudly asked, who shall set bounds to science, or to the widening circle of her horizon? But why should we try to do so, when it is enough to observe that that horizon, however it may be enlarged, is an horizon still—a circle beyond which, however wide it be, there shine, like fixed stars without a parallax, eternal problems in which the march of science never shows any change of place. If there be one fact of which science reminds us more perpetually than another, it is that we have faculties impelling us to ask questions which we have no powers enabling us to answer. What better lesson of humility than this—what better indication of the reasonableness of looking to a state in which this discrepancy shall be done away; and when we shall 'know, even as we are known!'

"But, Gentlemen, I have already detained you too long, and occupied your time far less profitably that it would have been occupied by many who are present on this occasion. The hospitality of this great city will afford you, I trust, a pleasant, and your own exertions will secure a profitable, meeting. You may well engage in its business and discussions with a sense of the high interest and value of your pursuits—not less interesting in themselves,—not less conducive to the progress and happiness of mankind,—not less tasking the noblest faculties of the mind, than those which engross the attention of jurists, of soldiers, or of statesmen, when their motives are the purest, and their objects are the best."

A vote of thanks was at the close of the address proposed by the Rev. Principal Macfarlan and Sir Roderick Murchison, and Professor Phillips; having explained the arrangements for the week, the company separated.

TOPICS OF THE WEEK.

We are glad to announce that the reports of the loss of Dr. Barth in Central Africa have received a most welcome contradiction, by the arrival at Marseilles, on Saturday last, of the enterprising traveller himself, after an absence from Europe of six years.

From the circumstance of the Duke of Argyll having stated in his Address at Glasgow, on Wednesday, that he trusted "the aid of the State may be secured in providing a house and home for the scientific bodies of the metropolis," there is reason to hope that the subject is really at length under the consideration of the Government. In granting this accommodation, and so relieving the limited funds of the Societies from the absorbing claims of the landlord, a most valuable means of scientific research will be diverted to its legitimate channel. Let us hope that with the blessings of peace will come a more intelligent appreciation, among those in power, of the pursuits which are not of any country in particular, but bring mankind into one universal family.

Mrs. Smith, sen., of Jordanhill, near Glasgow, died lately in her 100th year. This venerable lady was one of the correspondents of Mrs. Grant, of Laggan, and was well known to many of the literary celebrities of the west of Scotland during the two past generations. Her son, James Smith, Esq., of Jordanhill, F.R.S., in a graceful dedication of his last work, 'A Critical Dissertation on the Voyages of St. Paul,' refers to her as retaining in her 99th year the clear use of all her faculties. The recent bereavement has deprived the British Association of the active co-operation of Mr. Smith, who is one of the Vice-Presidents of the year, and his presence is missed in the Geological Section, in the proceedings of which he generally has taken a distinguished part.

An animated conversation took place on Tuesday, in the Geological Section of the British Association, at Glasgow, after the reading of a paper by Hugh Miller, on the ancient Flora of Britain, respecting a statement made by the distinguished Scottish geologist relative to a dicotyledonous plant having been found in the old red sandstone. The Duke of Argyll, Sir C. Lyell, Sir R. Murchison, Professor Phillips, Professor Nicol, and Professor Rogers of the United States, took part in the discussion, Professor Phillips stating his opinion that the plant exhibited was allied to the ferns, and was not a dicotyledonous plant. Professor

Rogers said he had lately discovered fossils of monocotyledonous plants in the black slate of Virginia, of the Devonian series, the oldest rock in which such fossils had yet been found.

At the Ordinary Meeting of the Town Council of Edinburgh last week, a letter was read from Dr. George Wilson, transmitting her Majesty's commission, erecting a Regius Professorship of Technology, and appointing him, as Director of the new Industrial Museum, to the newly constituted Professorship. Dr. Wilson requested a conference with his Lordship, and a Committee to arrange as to the lectures which he intended to deliver during the winter session. The Lord Provost stated that Dr. Wilson, in a note, informed him that there was no exact equivalent in English for giving a rendering of what was embraced under Technology, but the nearest definition was physical science in its application to the useful and economic arts, the Fine Arts not falling under the province of Technology. His Lordship referred to the importance of this chair, and the obligation under which they lay to the advisers of the Crown for its institution, and said that the Council would aid by every means in their power the object for which the chair was instituted. The benefits of the chair would not be confined to the students of the University, but would be extended to all whose attention was directed to the useful arts; and it was suggested that the same fees for matriculation should not be charged. The Clerk of the Council stated that the commission in favour of Dr. Allman, who had been appointed Professor of Natural History, had not been received, but it was daily expected; and the Council formally agreed to fill up the lectureship of Mineralogy under Dr. Thomson's will, which place is always assigned to the Professor of Natural History. The names of Professor Bennett, of Edinburgh; Dr. Henry M'Cormack, of Belfast; Dr. Laycock, of York; Dr. Alexander Wood, Dr. Halliday Douglas, and Dr. W. T. Gairdner, of Edinburgh, were announced as candidates for the chair of Practice of Physic, the election for which was fixed for the 2nd October.

The subscribers, and all others friendly to the Meteorological Association for Scotland are invited, by the honorary secretary, A. Keith Johnston, to meet the Duke of Argyll, the Marquis of Tweeddale, and other members of the British Association, at breakfast, on Friday next, at the Queen's Hotel, Glasgow, to receive and discuss the report of the Provisional Council.

The rejoicings throughout the country on the arrival of the glorious tidings of the fall of Sebastopol, have recalled old historical recollections of similar scenes in the last great war. By the electric telegraph the news reached every part of the kingdom on Monday evening; and in traversing England on the following day, as many of our readers must have done on their way to the Glasgow meeting of the British Association, flags were seen floating in every rural village as well as in the large towns of England. On many of the mountain heights of Scotland bonfires were lighted on Tuesday night, and on Monday night the people of the Dee-side learned the gratifying intelligence by this means, Prince Albert and his suite having kindled a joyful light on a hill above Balmoral. Since the time of Waterloo no scene of rejoicing so general has been witnessed in this country.

Simultaneously with the close of Mr. Albert Smith's nightly 'Ascent of Mont Blanc' in Piccadilly, which, though accomplished in imagination at an expense of two shillings, is not to be realized under thirty pounds, comes intelligence of a new route by which the ascent may be made in reality at an expense of only twenty shillings. "Two months ago," writes Mr. Kennedy, of Caius College, Cambridge, to 'The Times,' a few English tourists "left home in the hope of escaping this attack upon their purses, and of ascending the glorious old mountain by a path of their own selection. The party consisted of the Rev. Charles Hudson, the Rev. J. G. and Christopher Smyth, Messrs. Charles Ainslie and E. J. Stevenson, and myself, all of whom were prepared to dispense with guides, and to rely upon their own resources. We started from the delightful inn of Mont Joli, at St. Gervais, about nine o'clock on Monday, August 13, accompanied by three chasseurs, as well as six porters, whom we had engaged to carry our provisions the first part of the distance. We skirted the Glacier de Bionassay, and, ascending by the Pierre Ronde, reached the foot of the Aiguille de Goûté about six in the evening, and there dismissed the six porters. Not far from the vestiges of De Saussure's cabin, and at a height of about 10,000 feet, we found a rude and roofless hut, occasionally resorted to by chamois-hunters as a place of refuge. Our hatchets speedily cleared away the ice and snow with which it was choked, and, having roofed it with a macintosh, we shook down our straw bedding; then, lighting our charcoal fire, we supped cosily, and, after encasing our lower extremities in the empty sacks, we curled ourselves up for the night, and slept soundly till the young hours of morning. We awoke in capital spirits, devoured our breakfast with the zest of mountaineers; then, starting at daybreak, rapidly climbed the Aiguille, and at seven o'clock found ourselves upon the summit of the Dôme de Goûté —a spot probably never yet visited by any of our adventurous countrymen. Mr. Stevenson, who had accompanied us in other excursions, was not in his usual health, and, to our regret, was compelled to remain behind. At this point, too, we dismissed our three remaining attendants; and, ourselves shouldering our small remaining stock of provisions, we now ventured alone upon unknown fields of trackless snow. We descended to the Grand Plateau, where we struck at no great distance from its termination the route by which the ascent is daily made during the season in Piccadilly. It will be sufficient to say that we gained the highest point of Mont Blanc with unexpected ease, just five hours after leaving the Dôme. We had thus attained the goal of our wishes; the most exciting and interesting part of the excursion was, however, still before us, for, encouraged by the brilliancy of the weather, we had determined upon finding our way down to Chamounix by a route entirely unknown to any of the party. We descended at a quick pace from the summit, and finding the snow upon the Mur de la Côte in a favourable state, we ventured to descend by a glissade, probably resembling in this respect Mr. Chapman's immortal butcher. Upon reaching the Glacier des Bossons, its crevasses offered at first some difficulty, but a little determination, with the aid of hatchets and of the tough rope which we had provided against accident, enabled us to reach the opposite side. In consequence of the detention thus occasioned, we were overtaken by darkness, and, when but an hour from the village, compelled to exchange the anticipated luxuries of Chamounix for a supperless bivouack passed amid the gloom of the pine forests. Many of your readers are aware that an ascent from Chamounix ordinarily costs each traveller something like 30*l.*; it may, therefore, be useful to state that our total expenses for the two days amounted to 25 francs for each member of the party."

A very good proposal is made in 'Notes and Queries,' by Mr. Gilbert J. French, to republish in a separate work engravings of ancient seals. "Many thousand seals," says Mr. French, "of great interest and value have been engraved, but they are so scattered through numerous publications as to be of little practical use to the antiquary, from the difficulty of a ready reference, even when the volumes containing them occupy places on his own bookshelf." There need not be any particular arrangement in such a work if issued in parts, as each subscriber may separate them, and re-arrange them in a blank paper book. The historical and archæological value of such a collection is obvious, if an editor of adequate knowledge and judgment can be found to undertake the selection, brief notes being given stating the date and nature of the document to which each seal is appended.

The Director-General of the Electric Telegraph in Sardinia has proposed, at an expense of 60,000*l.*, to connect Alexandria, Malta, and the Dardanelles by a line of submarine wires, and Lord Panmure has directed the Governor of Malta to ascertain to what extent the local government will co-operate in such a work.

We cannot help adding a note of protest to the many that have been expressed during the past week, against the contemplated road across the enclosure of St. James's Park. There never was a public project which the voices of high and low, rich and poor, whig and tory, are so unanimous in condemning, and we trust it will not be persisted in.

Among the designs submitted by architects for a building for the Midland Institute, to be erected in Birmingham, near the Town Hall, the one selected is in the modern Italian style, by Mr. E. M. Barry. The first stone is to be laid in November, by Prince Albert.

Madame Grisi, Madame Viardot Garcia, Madame Gassier, with Mario, Tamberlik, and other members of the London Operatic Company of last season, have been performing at Dublin, and next week appear at Glasgow, afterwards to fulfil a short engagement at Edinburgh.

The autumnal season of "the regular drama" commenced last Saturday at Sadler's Wells, when *The Stranger* was the inaugural piece, the part of *Julia* being sustained by Miss Margaret Eburne, a youthful *débutante* of high promise. The *Master Walter* of Mr. Phelps and the *Bottom* of Mr. Ball are admirable performances, and the other parts are well sustained.

VARIETIES.

British Museum Balance Sheet for 1854-5.

INCOME.

Parliamentary Grant	£55,225
Dividends on £30,000	900
Sales of Publications and Casts	695
Granted for Assyrian Excavations	1,500
Balance in hand for Ditto	1,130
	£59,650

EXPENDITURE.

Salaries	£25,991
House Expenses	2,535
Purchases of Books and Specimens	15,861
Bookbinding, Cabinets, &c.	11,091
Cost of Publications and Casts	1,529
Law Expenses	305
Assyrian Excavations	2,461
	£59,043

Cowper's Letters.—Considering the secluded, uneventful course of Cowper's life, the charm of his letters is wonderful, and is to be explained, I believe, chiefly by the exquisite light of poetic truth which his imagination shed upon daily life, whether his theme was man, himself, or a fellow-being, or books, or the mute creation, which he loved to handle with such cheerful tenderness. His seclusion did not separate him from sympathy with the stirring events of his time: and alike in seasons of sunshine or of gloom, there is in his letters an ever-present beauty of quiet wisdom, and a gentle but fervid spirit. There is, I believe, no long collection of letters which can be continuously read with the same sustained interest, following the writer through cheerfulness and despondency into the cloud, from which he sent forth some words of sadness as it mysteriously closed over him.—*Professor Reed's (U. S.) Lectures on English Literature.*

Paper and Paper Duties.—In 1721, it is supposed that there were but about 300,000 reams of paper annually produced in Great Britain, which were equal merely to two-thirds of the consumption. In 1780 the value of the paper manufactured in England alone amounted to 800,000*l.*, the duty on which was 46,867*l.* 19s. 9½d. At that time the duty was divided into seven distinct classes or rates of collection. Twenty years after, when the mode of assessment was reduced to three classes, the duty had risen to 315,802*l.* 4s. 8d.; in 1830, fifteen years after, to 619,824*l.* 7s. 11d.; in 1835, to 838,822*l.* 12s. 4d., or, in weight, to 70,655,287 lbs., which was again in fifteen years nearly doubled. The quantity of paper charged with excise duty in the United Kingdom in 1850 was no less than 141,032,474 lbs., and last year (1854) the enormous weight of 179,896,222 lbs.—*Herring on Paper and Paper Making.*

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